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PREDICTING THE PERFORMANCE OF VOLUNTEERS: A MULTIPLE REGRESSION APPROACH

by

© LORNE DOUGLAS SEAMAN

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

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Abstract

This study was an attempt to predict the performance of volunteers on the basis of psychometric data gathered at intake. Subjects were volunteers in the Uncles at Large Program in Edmonton, Alberta, an agency which assigns male companions to boys from father absent homes. The performance criterion was a rating made by supervising counsellors on a scale developed by the author, termed the Volunteer Performance Rating Scale (VPR). Predictor variables were data from the Minnesota Multiphasic Personality Inventory (MMPI) and the Personal Orientation Inventory (POI) entered into separate analyses.

The subjects for the MMPI studies were 175 volunteers who entered the program between March, 1975 and October, 1978. One hundred and fifty subjects were assigned to a primary sample with 25 placed in a cross-validation sample. The standard clinical and validity scales plus the research scales were entered into a stepwise multiple regression to predict the VPR. The resulting equation was then applied to the cross-validation sample.

MMPI items were also entered into stepwise regression analyses. Items were first randomly assigned to six item sub-sets of manageable size. Separate regression analyses were conducted on the six, followed by a final analysis of the lead items in the six previous equations. The resulting equation was cross-validated.

The POI analysis involved 181 volunteers recruited between January, 1977 and July, 1979. Again 25 were assigned to a cross-validation sample. Multiple regression analysis of scales failed to generate an equation as no POI scales correlated significantly with the VPR.

POI items were also regressed against the VPR. Two methods of dealing with item pool size were employed: 1) as in the MMPI analysis, and 2) on the basis of magnitude of correlation. Resultant equations were cross-validated.

None of the cross-validations verified the predictive capabilities of the regression equations for either the MMPI or the POI. Failure to obtain significant results are attributed to a combination of methodological considerations and characteristics of the volunteer population.

Factor analyses of the standard MMPI and POI scales in combination with the VPR were also conducted.

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Many others have contributed significantly to the production of this work, and I am indebted to them. I would especially like to thank Dr. Henry Janzen, whose supervision greatly facilitated the creation of this thesis. Other committee members, Drs. Jay Bishop, George Fitzimmons, and Tom Maguire, also deserve thanks for the support given when needed and the encouragement provided to strive for excellence.

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I. Introduction

Volunteerism is a long standing tradition in North America. From early frontier days, when settlers drew together and put forth combined effort for the common good, the force has flourished. As our society became increasingly complex, many responsibilities borne by volunteers were assumed by either the private sector or by government agencies. To preserve the volunteer contribution in some spheres however, organizations have evolved to utilize the historic resource of the volunteer. To match the increasingly complex needs of a changing society, these organizations have adapted and diversified to offer a wide spectrum of services. Some have become household names; others function in the background all but unknown to those not directly served. Some serve during emergencies, others on special projects, still others on a day to day, ongoing basis.

The service needs of the single parent family has been affected considerably by social developments. When social structures were less complex, a boy in a father absent home could more easily expect companionship to be available from males in his extended family, or failing that, from men in the community at large. The reliance on spontaneous, direct action by community members to address the needs felt by many such boys became inadequate as social structures became more complex, and social relationships more formalized. The function acquired the need for structure observed in other areas of service needs. Organizations

such as Big Brothers were established at the turn of the century and developed in size and scope.

In Edmonton, Alberta, the Uncles at Large Society was formed in 1967 to meet the needs of boys from father absent homes. This program is the setting for the present study. It was established to provide boys from father absent homes with the companionship of a male volunteer. This was felt necessary to reduce the incidence of maladjustment believed to be associated with father absence. Agency publicity circulated between 1976 and 1979 described the rationale for the program as follows:

> Lack of a male figure has been shown to cause social disturbances in some children. Fatherless boys are over-represented in appearances before Courts, and juvenile treatment centres. They have a greater chance of failure at school and tend to show behaviour problems more frequently. As adults they run a higher risk of unsuccessful marriages.
>
> The Uncles at Large program endeavors to provide these boys with the adult male companionship considered desirable for healthy development. We hope the attention given a boy by his "Uncle at Large" will reduce the incidence of social maladjustment which may occur when there is no significant male influence (Uncles at Large Program, p. 1).

Except for the avoidance of the term "fatherless," the currently circulated description of the program is identical. The intended focus of the program was preventative. Its clients were boys who, although not neccessarily showing signs of disturbance were thought to be at risk because they had little or no contact with their absent fathers. This delineation of service population was based on the assumption that such boys are "at risk" developmentally.

Then, as now, volunteers were recruited from all walks of life. At the time this research was begun, an informal study of the biographical information of the volunteers on file was conducted. It indicated that the majority were well educated middle class individuals such as professionals and the self-employed. Age distribution tended to be bimodal. Younger men, either single or just married, formed the larger of the two sub-groups. A second group generally over the age of 45 formed a distinct second cluster. The counsellors interpreted these observations as suggesting that the program attracted men who did not have the companionship of a child available, the younger men having no family of their own and the older men having children who were now grown. Participants whose age was in the range between were often observed to be divorced or separated.

Men inquiring about becomming volunteers were sent an application form to complete and return. This was, in part, a self-screening procedure to test a man's motivation. The applicants' telephone inquiry about the program were often in direct response to advertising. The application gave the man the opportunity to think twice before embarking on an important commitment. About one third of those who called did not return the form.

When the application form was received an interview was arranged with one of the counsellors. It was generally semi-structured, lasting about one hour, and covered a wide range of topics, such as the man's motivation to

participate, attitudes toward child rearing, and other commitments in the man's life. If the counsellor felt the man showed potential to form a close, responsible relationship with a boy, the applicant advanced to additional screening procedures, including reference investigation, criminal record check, and psychological appraisal. The MMPI had been used from the inception of the program as a primary instrument in volunteer assessment. It was seen to have the potential to identify individuals who were risk candidates for the program because of possible symptoms of psychological distress. Program counsellors felt individuals with elevated profiles may not be able to form and maintain the personal relationships expected of volunteers, or alternately, may not fulfil the required commitment.

Other psychological tests used at various periods in the program's history have included the Sach's Sentence Completion Test and the Sixteen Personality Factor Test (16PF). These were used as an adjunct to the MMPI. Use of the Sachs was discontinued some years prior to the present study, while the 16PF was deleted from the screening procedures when a study found that its profile bore no discernable relationship with the counsellor's ratings of the performance of volunteers in the program. A discussion of this study as it applies to the MMPI is found in chapter 2.

If the applicant was deemed suitable at this point, he was asked to attend an orientation seminar in which two experienced volunteers, two mothers of boys in the program,

and a counsellor were present to act as resource persons. The volunteer was then matched with a boy, taking into account such factors mutual interests, geographic location, difficulty level of the assignment, and stated preferences.

At the time of this study, about half of all applicants went on to be matched. Roughly one in eight were rejected, with the remainder withdrawing voluntarily for a wide variety of reasons. Agency personnel report these proportions to have changed little since the time of the research.

An "Uncle" was matched with the understanding that his participation involved a two part commitment--that he was to see his "nephew" on an average of once a week for about four hours, and he was to maintain his involvement with the boy, barring unforseen circumstances, for one year. In fact, the average length of match upon termination varied from 1.5 to 2 years.

Reasons for terminations of matches were recorded. In 1978, between 70 and 85 per cent were for "normal" reasons, such as the boy turning 17 (the ceiling age for participation), the mother remarrying, the uncle or mother moving, or the uncle's circumstances changing such that the commitment was no longer possible. The remaining 15 to 30 per cent were terminated for reasons termed "uncle failure". This category included a wide array of behaviors, the most frequent being a simple failure to live up to the commitment regarding frequency of contact, with little of no explanation offered. Other reasons included insensitive or hurtful

behavior or an inability to cope with behaviors thought by the counsellor to be within the normal range of child behavior. Many of these failures occurred after a year or more of apparently good performance on the uncle's part. While such terminations were considered regrettable, they were not thought, in most cases, to be complete losses. Of greater concern were the cases in which the volunteer performances were assessed as unacceptable within the one year time period to which the volunteer had committed himself. It was also thought that these failures were theoretically more able to be predicted than the more tenured ones. Since the existing clinical appraisal methods seemed unable to effectively predict those who were likely to be unsuccessful, it was decided to undertake an empirical predictive study.

A number of empirical methods are available to predict performance; notable amongst these statistical procedures is multiple regression. As will be shown in chapter 2, multiple regression is a powerful means of combining numerical data to estimate or predict a variable. Any quantifiable variables, such as test data, can serve as independent variables in such analyses. The method can be used at the scale level of tests to combine existing scales to predict a criterion. Alternately, the analysis can take place at the item level to create a new scale.

A. Purpose

In vocational assessment (of which volunteer selection is an example) the objective of predictive studies is usually to determine if the addition of a particular procedure will result in an increment in accuracy beyond the decision-making baseline of methods already in place. Rarely does a researcher in an applied setting have the luxury of developing predictive instruments on subjects not already pre-selected by other means.

In the Uncles at Large Program, counsellors screened applicants on the basis of interviews, reference investigations, criminal record checks, and clinical interpretation of psychometric data. The staff perceived the need to improve the assessment of candidates in two ways. First was the need to identify candidates who, although cleared by the existing procedures, would prove unsuccessful if actually admitted to the program. Derived predictive procedures would therefore be employed as adjuncts to the clinical methods in use to screen out potentially unsatisfactory volunteers.

The second purpose of a predictive study was to identify those volunteers likely to be strong performers so that they could be selectively assigned to more challenging matches, or relied upon to function with greater than usual autonomy.

Intake psychometric data can be related to performance at a more conceptual level as well. Using factor analysis,

it should be possible to identify personality variables which are associated with volunteer performance. The demonstration of such a relationship between personality and performance would allow counsellors to check if criteria they are employing for clinical judgements have merit. Further, hypotheses can be formulated as to what instruments may be worth investigating for future use in the screening process of the agency.

Research relating intake data to performance, therefore, has two overall purposes:

1. providing practical input in developing strategies for effective, efficient screening and assignment of volunteers.

2. acqiring a clearer conceptual undersanding of the psychological concomitants of high level volunteer functioning.

II. Review of the Literature

A. The Clinical vs the Actuarial Approach to Prediction

Two general methods of prediction are available in in the practice of Psychology--the clinical and the statistical. The relative effectiveness of the two methods has been the subject of long standing debate. There seems to be little question that the statistical method is superior when the task involved is the the prediction of a quantifiable criterion by the combination of numerical data. Meehl (1954) pointed out that in twenty studies he reviewed, in all but one, actuarial prediction was equal to or superior to clinical methods. Meehl concluded that the statistical method must be considered more effective than the clinical. He noted that many of the studies he reviewed contained substantial methodological flaws, for instance, they generally examined the "average" clinician, thereby precluding the possibility of discovering if a "good" clinician using superior clinical methods can do better than an actuarial. The results of several of the regression studies were based on the analysis using the derivation sample rather than on an independent cross-validation sample. Meehl nevertheless felt that the evidence was so overwhelming as to necessitate his conclusion that statistical predition is superior.

Meehl's conclusions have received support from Sawyer (1966) whose review of studies concluded that the clinician cannot match the actuarial in prediction. Humans are simply

not highly efficient combiners of data.

So inefficient is the clinician in combining data that studies comparing clinician's predictions with the predictions based on equations utilizing weights selected and assigned at random have consistently found the random model outperformed the human (Dawes, 1979).

Distressing though this poor performance may be, its significance should not be overemphasized. A number of studies question the dichotomy imposed by Meehl. In establishing the ground rules for the comparison of the clinical and the statistical approach Meehl (1954) wrote:

> Any empirical study of actuarial versus non-actuarial predictive techniques should involve the making of predictions from similar or identical sets of information by the two methods, and a comparison of the success frequency arrived at in these two ways (p. 84).

Dawes (1979), Holt (1958, 1970), and Sayer (1966) pointed out that this denies the clinician the opportunity to employ his two principal strengths--data acquisition and analysis of non-numerical, non-parametric information. As Holt stated it:

> Thus, the statistician takes advantage of the foolish boast of the clinician, "Anything you can do, I can do better," and plans the contest on his own grounds. The clinician ends up trying to predict grade-point average in the freshman year by "clinical synthesis" of high grades and an intelligence test. This is a manifest absurdity: under the circumstances, how could the clinician do other than operate like a second rate Hollerith machine? (Holt, 1958, pp. 5-6.).

As has also been pointed out by Scissons (1976) and Pelensky (1980) pursuing an answer to the question "Which

method is better?" misses the point. It would seem most advisable to follow the advice of Trankell (1959) and determine the strengths of each, such that both methods may be enhanced. By combining the methods, the best of each can be employed. In agreement with Holt (1958), Wiggins (1973) stated:

> Clinicians need not view themselves as second-rate IBM machines unless they choose to engage in activities that are more appropriately performed by such machines. In the realm of clinical observation and hypothesis formation the IBM machine will never be more than a "second rate clinician" (p. 199).

As Wiggins and Holt have stated the clinician serves an indispensable function in the appraisal of individuals and the prediction of their future behavior. He brings to the process his ability to observe the individual, to gather information, to "create" data. The data so generated may be quatifiable and ultimately become grist for the actuarial mill, or it may defy attempts at quantification demanding that the clinician retain a prominent position in the decision-making process.

This principle can be applied to the Uncles at Large Program. Skilled clinicians must at times make discretionary use of such non-parametric data as biographic data, reference comments, criminal record investigations, and interview behavior, however it appears strongly advisable to develop empirical techniques to make optimal use of psychometric data. Such techniques would serve as an adjunct to the clinical method.

B. Predictive Studies in the Volunteer Sector

The fundamental contrast between volunteer work and vocational activity is the nature of the reinforcements provided. This suggests a pattern of motivations in effect for the volunteer different from that of individuals engaging in remunerated activity. It is clear that since monetary incentives are absent, that the rewards for the volunteer must be either of an internal or a social nature. Should such rewards not be maintained, motivation is more likely to wane and performance suffer than in occupational roles where salary is still available as a reinforcer. Furthermore, in the case of most individuals, voluntary activity is likely to be a lower priority than other demands such as family and work responsibilities. During times of stress, or when an individual finds himself overcommitted, the usual tendency is for a person to focus his resources to maintain those activities of more central importance. Other activities, through intention or otherwise, are allowed to slide. It is the experience at Uncles at Large that this is the case of volunteer work. An individual is likely to exert greater effort to maintain his occupational obligations and his family roles, since they are higher on a list of priorities.

For this reason, the volunteer community represents a unique sector, in need of study. Unfortunately, although the volume of literature in the field of volunteerism is growing, much of it is descriptive in nature rather than

empirical (*eg.* Cull and Hardy, 1974; Fo and O'Donnell, 1974; Hubka, Talkington, and Warren, 1974; Lee and Rubinstein, 1977). In such publications, programs are described, problems discussed, suggestions made, and future directions outlined. Many of the publications which do have a research base focus on the differences observed between volunteers and non-volunteers.

Exemplifying this approach is Freeman, Novak, and Reedner (1957). They interviewed 299 families in Spokane, Washington and obtained information on 29 biographic variables in addition to the number of volunteer organizations in which they participated. They used the magnitude of beta weights resulting from multiple regression analyses as an indicator of strength of association with participation. They concluded that families in which adult members were strong volunteers (belonged to two or more such organizations) tended to be more middle class (the best predictor was income), were residentially mobile, prefered small communities, were less thrifty, valued progress, and trusted civic leaders more than those who participated in less than two volunteer organizations.

The use by these researchers of the regression weights to indicate the relationship of biographic variables with voluntary paricipation cannot be justified. The weight assigned to a variable by multiple regression is related neither to the variable's correlation with the criterion nor to the magnitude of the variable's contribution to the

regression equation. The conclusions drawn by Freeman, Novak, and Reedner (1957) therefore have little merit.

Scott (1957) studied a random sample of the population over the age of 10 in Bennington, Vermont. He assigned a questionnaire to them assessing a wide range of biographic data. He also asked about the respondent's participation in voluntary associations, such as service clubs, church groups, or community associations. He found that 35.8% of the sample participated in no voluntary organization compared to 35% in Chicago, and 60% in suburban Westchester, New York. The average length of participation in the association for volunteers was 10 years. He found that participation rate increased with education, but was unrelated to age. More men than women participated, and the non-manual occupations were more likely to participate than manual trades. Married individuals were also more likely to be participators as were home owners. As well, participation rate rose with social status. Scott profiled the typical volunteer as follows:

> The ideal voluntary association member might be characterized as a forty-five year old married man of high social status, who is Protestant, a non-manual worker and possibly a son of native-born parents; who has two children, a college education, fifty or more "friends", his own home which is no more than the third house in which he has lived since he came to the community less than eleven years ago; and who participates as a member only in a fraternal association, which he attends approximately twice a month, which costs him twenty-three dollars a year, and of which he has been a member for ten years (p.325).

Both the Scott study and the one by Freeman, *et al.* refer to a wide range of association memberships, rather than focus on participation in voluntary helping service.

Knapp and Holzberg (1964) studied the test results obtained at the time of admission to Wesleyan University, of 85 college students who went on to volunteer as companions to chronic mentally ill hospital patients. The test data were compared to the test results of 85 fellow college students who did not volunteer. Psychological tests used were the MMPI, the Edwards Personal Preference Schedule, the Allport-Vernon-Lindzey Scale of Values, the Scholastic Aptitude Test (SAT), and the Terman Concept Mastery Test.

The volunteers were found to have obtained significantly higher scores on the Intraception and Nurturance scales of the Edwards as well as the Social and Religious scales of the Scale of Values. Lower scores were obtained on the Change scale of the Edwards and the Economics scale of the Scale of Values. No scale of the MMPI significantly differentiated the volunteers from the non-volunteers, nor did either of the aptitude measures. The researchers concluded:

> the companions are more idealistic in temper, more capable of generosity, less concerned with personal gain, and more responsive to religious values than their associates who have not elected to join this program (p. 85).

In a later study, Holzberg, Knapp, and Turner (1967), again using parallel administration of tests for volunteers and non-volunteers, assigned a battery including the Scale

of Values, and the Strong Vocational Interest Blank. They found volunteers to be lower than the non-volunteers on the Economics scale of the Scale of Values and to show an interest pattern on the Strong which was more similar to that of the service professions than were subjects in the control group. Psychology majors were over-represented among volunteers and there were fewer disciplinary actions against them as a group than was the case with the non-volunteers.

Herch, Kulik, and Scheibe (1969) assigned several personality measures, including the California Psychological Inventory (CPI) to 151 volunteers in the Connecticut Service Corps. In addition, the research subjects were administered the Strong Vocational Interest Blank and were asked for biographic information. The control group consisted of 142 college summer students paid ten dollars to complete the same tests and provide the same biographic information. The volunteers scored significantly higher than the controls on the CPI scales of Self Control, Tolerance, Good Impression, Achievement via Independence, Psychological Mindedness, and Flexibility. The researchers concluded that the volunteers were more mature, higher in self control, possessed a higher drive for independent achievement, and showed greater sensitivity to people. Moreover, male volunteers were lower than males in the control group on the scales of Sociability, and Self Acceptance, suggesting them to be less at ease socially. Significant differences were also noted in Strong results. The volunteers showed a resemblance closer than

did subjects in the control group, to the attitudes and interests of Group I occupations (psychologists, physicians, psychiatrists, *etc.*), Group V (social workers, ministers, vocational counsellors), Group VI (musicians, music teachers), and Group X (ad men, journalists, lawyers). Lower interest similarity was noted in the Group IV (technical), Group VII (entrepreneurial business professions), and Group IX (sales). Regarding the differences observed on the Strong, Hersch, Kulik and Schiebe stated:

> In general, male and female SC (Service Corps) volunteers have interests in the independent professions; in social service; in careers involving the use of language of the excercise of artistic skills. By temperament the SC volunteer seems unsuited to business, entrepreneurial and "nonprofessional" occupations (p. 33).

Biographic data suggested the volunteers to be more interested in careers in the mental health field and were, in general, more service oriented than the non-volunteer.

Smith and Nelson (1975) pooled volunteers in Big Brothers programs in Virginia with volunteers in rescue squads to form a sample of 571 volunteers. They compared the responses of the volunteers on the 16PF with those of non-volunteers drawn at random from the state. Volunteers were found to be significantly more outgoing, happy-go-lucky, venturesome, and to show more self-control. Further, they were less liberal, less shrewd, and less self-sufficient. The researchers do not describe administration procedures in sufficient detail to determine if parallel conditions prevailed.

There appears to be an assumption in much of the research that volunteers are largely a homogeneous lot. Other studies do not support this assumption. Engs and Kirk (1974) found that amongst volunteer counsellors at seven community health centres, those who had previous counselling experience scored significantly higher on the Flexibility scale of the CPI than those without such experience. They found no difference, however, on CPI scores of those volunteering for the stated reason of helping others and those joining for other reasons, such as self-development. This was in spite of the fact that those reporting the motivation to help others worked twice as long as those volunteering for other reasons. Russem (1976) demonstrated that even amongst volunteers working in very similar settings, different personality dynamics are evident. He administered the Purpose of Life Test and the Family Adjustment Test to four types of volunteers: experienced hot line counsellors (more than six months of service), hot line trainees, hospital volunteers and board members of service organizations. He found that the hot line workers were significantly different than the hospital volunteers or board members on both measures. The board members and hospital workers both indicated a greater purposefulness of life and a stronger commitment to home than either of the hot line groups.

There is some evidence, therefore, that volunteers are more service oriented and less economically minded than

non-volunteers. The findings suggest that the volunteer population is sufficiently different from the population as a whole to warrant study. Although not addressed by the research, there remains sound reason to hypothesize a different set of motivations for individuals when entering into a voluntary endeavor than when engaging in remunerated activities.

Because of the apparent motivational factors in operation, predicting performance in the volunteer sector can be more difficult than in the vocational field. Paradoxically, the absence of material rewards to hold a volunteer demands close matching of the characteristics of the volunteer with those of the assignment. Predictive studies are part of the process of developing criteria for accomplishing this end. Difficult though the task of conducting predictive studies might be, it is much needed for the effective management of volunteer resources.

In spite of the need, little such predictive research has been conducted in the volunteer sector. Two reasons appear to underly this deficit in research. The first is the cost of carrying out required studies. Many agencies using volunteers are chronically short of money. In many cases, it is to conserve money that volunteers are used in the first place. For such agencies, neither money nor staff time is available for design or conduct of research. A second factor underlying the paucity of research is that in many volunteer endeavors, the consequences of volunteer

failure is not great. The agency can therefore accept whatever failure rate it has rather than attempt to reduce it.

It is significant that much of the published research has been done in programs with comparatively large sums of money which can be made available for research and/or in which the consequences of poor performance are high. Prominent among programs engaging in research are the United States Peace Corps and a number of telephone crisis or suicide prevention centres.

Mischel (1965) studied Peace Corps volunteers assigned to Nigeria. He used a variety of measures as predictors, including a 24 item version of the California F Scale, the Barron Ego Strength Scale (Es) and the Taylor Manifest Anxiety Scale (MA). Test data were gathered for research purposes only and subjects were made aware of this. Other predictor data included a mean of academic grades obtained during peace corps training, peer ratings (*eg.* What 7 persons would you most like to work with in Nigeria?), a five point global rating by faculty members, and the five point rating by the final selection board. Performance ratings were made by field staff in Nigeria, blind to the predictor data. The final criterion was a weighted composite score of the volunteer's performance in six areas. Mischel found that the only significant predictors for his 41 subjects were the three psychological tests used, with the F scale, Es, and MA correlating -.45, .34, and -.34 respectively with the criterion.

In another Peace Corps study, Guthrie and Zenktick (1967) used peer ratings (as in Mitchell), selection board ratings as well as the MMPI, the Scale of Values, the Strong, and the Johnson-O'Conner English Vocabulary Test. In that study the selection board proved to be the best predictor. Peer choice did not predict significantly. The only MMPI scale found to correlate significantly was the K scale with an r = .13. MA was unrelated to the criterion and Es showed a correlation of only .18, much lower than found by Mischel.

Dicken (1969) conducted a similar study of 55 Peace Corps volunteers in Peru. As predictors, he used the 13 standard scales, the Es scale, and 13 research scales of the MMPI, the Crutchfiel Embedded Figures Test , in combination with training grades, and peer, faculty, and selection board ratings. Multiple criteria were employed, including a field rating similar to Mischel's and separate ratings by researchers and Peace Corps inspectors. Dicken obtained mixed results containing a strong sex effect. No predictor showed significant correlations with all three criteria consistent across sex. Of the array of results obtained, Dicken concluded that the most valid predictors were peer ratings, life history data, "certain training grades" and ratings made be a selection board. Some personality measures, such as the MMPI Es and the Crutchfield had "modest validity". The methodology of Dicken's study must be questioned, given the number of correlations examined.

Several predictive studies have focused on volunteers in para-counselling roles. Mullens (1973) studied the first 27 volunteer counsellors to be used in an Oklahoma multidisciplinary family counselling centre. She assigned the Cs scale of the CPI, the California F scale and a sentence completion test designed by the researcher. The sentence completion test was the best predictor of success as measured by a researcher-developed rating scale. Multiple regression did not add significantly to the predictive power of the sentence completion test. Sample size was small, however, and no published replication has been found.

Suicide prevention centre volunteers have been the subjects of predictive studies by Ansel (1972) and others. Ansel investigated a number of demographic variables in relation to four criteria of good performance of volunteers. Two performance variables were participation factors, Length of Service, and Involvement Ratio, the latter being a measure of the number of shifts worked. The two other criteria were ratings performed on tapes of actual crisis calls. These were termed the Technical Effectiveness and Facilitative Genuiness scales and were based on the Carkhuff and Truax scales (1967). Multivariate statistical analysis failed to yield significance. Ansel concluded this may have been, in part, due to the nature of the criteria. TE and FG correlated significantly, but poorly. He suggests that a call by call monitoring of volunteers may be in order rather than attempts at prediction.

Belanger (1972) studied volunteers at the same centre as Ansel. Seventy-two volunteers were assigned the CPI and were rated on the primary Truax and Carkhuff scales. A composite score was calculated, termed the Clinical Effectiveness (CE) of the volunteers. Drawing from factor studies of the CPI, suggesting there to be only two factors--stability and extroversion, Belanger used two scales from the CPI to measure these traits. He employed multiple regression in an attempt to predict CE. The results failed to produce a means of practically predicting the criterion. He then attempted to find a relationship between the Flexibility Scale of the CPI and performance, but failed. Following this, he turned to item analysis using the remaining items of the CPI. He calculated inter-correlations of the items with the criterion and selected the best 17 using half the sample, selected at random. He termed these items the CE-36 Scale. This scale, when applied to the remaining 36 subjects in the sample, correctly classified 3 of the bottom 4 subjects with only one of the top 32 being misclassified. A final 19 item scale (CE-72) was then developed using the entire 72 subjects. This scale contained 11 of the items from CE-36. Although Belanger reports this scale to predict well in the given sample of 72, the resultant scale is without cross-validation.

Herrick (1975) employed the EPPS and the Myer Briggs Type Indicator as variables in an attempt to predict the Cousellor Effectiveness of 36 hot line volunteers. None of

the scales correlated sufficiently to be useful as a screening measure.

Evans (1976) subjected the MMPI (short form) responses of 56 hotline volunteers to two analyses. He wished to predict using intake test data, which volunteers would be classed as conscientious (n=26). He developed an empirical scale using as a criterion for inclusion of items, a Z value of 1.90. This method resulted in a 20 item scale termed the Hotline Perseverence Scale (HPS). When the HPS was included in an equation generated by discriminant analysis of MMPI scales, 90% of conscientious and 96% of non-conscientious volunteers were identified. Also included in the equation were the Lie Scale (L) the Hypochondriasis Scale (Hs) and the Psychasthenia Scale (Pt). Since Evans did not include a cross-validation in his methodology, and since no other researchers have conducted validity studies (Evans, 1980), the ultimate validity of his approach and the derived scale must await replication.

Fenichel (1978) reasoned that since hotline volunteers' principal task was empathic listening, audiotape listening tests would be the most suitable predictors of performance. He used the Human Empathic Listening Test (HELT), the Jones-Mohr Listening Test, and the Content Filtered audio portion of the Profile on Non-verbal Sensitivity. Only the HELT predicted ratings of performance showing an "excellent accuracy" in discriminating the uppermost and lowest quartiles. Contamination of scores was noted for those

volunteers with previous counselling experience, suggesting the HELT scores may, in part be a function of training. Fenchel concluded that the HELT would be most effectively used to assign volunteers to different training experiences rather than as a means of overall selection.

In one of the few published predictive studies done in the Big Brothers of America program, Nadel (1969) assigned the Harris Revised Scale of Social Responsibilty, the Digit Symbol Subtest of the Weschler Adult Intelligence Scale, and Part II of the California Lee Thorpe Occupational Interest Inventory to 222 volunteer and control group subjects. He found no difference between the volunteers and the control group subjects, but found that the volunteers rated as successful scored higher on all of these measures than did volunteers assessed to be unsuccessful. Nadel concluded that successful volunteers were more socially responsible, have a higher level of motivation, and a higher level of aspiration than unsuccessful volunteers. Although the study suggested there were differentiating characteristics between successful and non-successful volunteers, in his discussion of the implications of the findings, Nadel indicated the observed differences were of little practical value in the screening of volunteers.

C. Desired Volunteer Characteristics

The opening discussion in this chapter of the clinical *vs.* the actuarial approach concluded that both of these key methods must be stengthened and used conjointly. For a program such as Uncles at Large, the discovery of qualities associated with effective performance in one to one relationships can further this aim. An examination of the literature can assist in two ways: it can provide direct input to the counsellors in developing clinical strategies and it can aid in the formation of research hypotheses concerning the outcome of factor analytic studies.

Two strategies are possible in conducting such a literature review. The first involves investigating qualities found to be pertinent to volunteer performance. As has been pointed out, however, clinical prediction in such endevours has fared poorly. Further, there is virtually an absence of such literature pertaining to the volunteer sector.

A second approach is to search the literature pertaining to closely analogous relationships and derive hypotheses based on the findings of such studies. Since the *raison d'etre* of the Uncles at Large Program is to provide a father surrogate, it is reasonable to hypothesize that many of the functions of fathers will also apply to volunteers in that program. Qualities which, when present in fathers, enhance the development of children can be hypothesized as desirable in volunteers. A discussion of the research on the role of

the father is therefore in order.

Fathers and Sons

A number of studies have been conducted which explore the relationship between specific paternal characteristics and various target traits and behaviors in sons. Presumably, by identifying such paternal factors which foster characteristics in children which are viewed as positive developments, it can be concluded that such paternal qualities are desirable. Many of the studies of fathers and sons have been directed at the father as a role model and subsequent filial immitation of him. While some earlier work had been done, Bronfenbrenner (1958) spurred efforts with his theoretical examination of the field. He argued that when investigating identification, it is not sufficient to demonstrate that a son is similar to his father or even that he is more similar to his father than he is to other figures, such as his mother or other men. Bronfenbrenner stated that the child wants to be like what he believes his father to be. Bronfenbrenner recognized the serious methodological difficulty inherent in this requirement. Clearly, asking a child, particulary a young child, about his perceptions and intentions is of dubious worth, and yet Bronfenbrenner insisted this is what must, in effect, be accomplished. He presented some suggestions for argument's sake such as the use projective measures (a suggestion acted upon by many researchers) but reached no conclusion in his article.

> We are left in a quandry. If we cannot ask the marksman, and if we cannot count the actual hits, how are we to determine whether the behavior of the marksman is in any way co-ordinated with the shape and movement of the target. (p. 124)

This dilemna characterizes much of the work in the field. Some researchers, in disagreement with Bronfenbrenner, attempted to demonstrate the similarity of a son with his father. Generally, a specific functional area such as sex role functioning was selected in which to prove this similarity.

Most such attempts to find a direct relationship between paternal and filial masculinity have failed. Bronson (1959) differentiated between overt and covert filial masculinity. Overt masculinity, or sex-role adoption as it was referred to by Biller (1969) was measured by the Honzig Mf Scale. Covert masculinity, similar to what Biller calls sex-role orientation was inferred from the subjects' responses to the Thematic Aperception Test (TAT). He found no relationship between a boy's masculinity, overt or covert, and his father's masculinity . The latter was determined from interviews with members of the family which usually but not always included the father.

Heller (1959) found no relationship between filial and paternal masculinity using several measures, both objective and projective, to assess each. Parents were given the Mf of the Minnesota Multiphasic Personality Inventory (MMPI) and the Work Interest Inventory, as measures of overt sex identification, and the Rorschach to assess covert sex

identification. Each child was given the Sex Identification Test (developed for the study) to determine his sex identification. The sex identification test is composed of 3 sub-tests: picture activities, doll play, and toy choice. The four and five year olds in the study were found to make "sex appropriate responses", however, no relationship was found with the sex identification of either parent.

Angrilli (1960) measured the masculinity of both parents using a questionnaire and a figure drawing test. The masculinity of boys in the study was determined using both figure drawings and judgements of teachers based on the child's, behavior, personality and preferred activities. Angrilli failed to find a relationship between the masculinity of son and father.

A number of studies have focused on "masculine" characteristics such as paternal punitiveness and dominance. Several such studies employed external definitions of the paternal qualities such as researcher ratings or maternal report. Lansky (1956), and Altoucher (1957) noted that adolescent boys with feminine interest patterns came from homes in which the mothers exerted most power. Biller (1969) also found researcher-rated paternal power associated with increased masculine sex-role orientation in children. He used projective doll play to measure filial masculinity.

Sears (1953), Mussen and Distler (1959), and Mussen and Rutherford (1963) used projective measures to assess sex role orientation in young children. They found no

relationship with ratings of paternal power or punitiveness, made by researcher or by the boy's mother. Attempts by Hartup (1962) and Kohlberg and Zigler (1967) also failed to find a relationship between filial masculinity assessed by projective techniques and maternally reported paternal power.

Among those researchers who followed Bronfenbrenner's (1958) suggestion, and focused on the child's perceptions and intentions, results have been equally mexed. Mussen and Distler (1959) Rutherford and Mussen (1963), and Biller (1969) found filial masculinity related to child-perceived paternal power.

Mussen and Distler (1960) and Distler (1965) found no relationship. The array of ambiguous results, complicated by methodological considerations has led Lamb (1976) to conclude:

> With few exceptions...the modelling literature has failed to substantiate its fundamental hypothesis: that masculine fathers will produce masculine sons. (p.30)

Since the masculinity of the father and the presence of "masculine" characteristics like power, dominance and punitiveness are insuficient to explain the acquisition of sex role orientation in boys, researchers have sought other paternal qualities which enhace masculine sex role acquisition. Several have directed their attention to the contribution of paternal nurturance in this process. Nurturance has been described in most studies with considerable consistency. Use of the term in reference to the father has

generally meant the father was warm, available, supportive, flexible, permissive, and participative in child rearing. On discovering that paternal punitiveness only enhaced filial masculinity if the father was also nurturant, Bandura and Walters (1959) suggested that the nurturant behavior on the part of the father made the masculine role a more salient one to model after. Similarly, Bronson (1959) found that if fathers were undemonstrative, frustrating and critical, their 9 to 19 sons seemed to reject them as models, whereas a non stressful father-son relationship was associated with a son's masculinity, as assessed by his toy preference, positively correlating with the fathers. Moulton, *et al.* (1966) studying college men, found that when fathers were rated by their sons as both the dominant disciplinarian and affectionate, the son was more masculine in his responses to a questionnaire. If the father was percieved as dominant without affection, the son was not masculine.

Paternal nurturance has been found to be a significant determinant of filial masculinity in its own right, independent of other factors, such as the father's masculinity. Sears (1953) found that boys judged as more masculine because they showed a preference in doll play for the father doll, had relationships with their fathers described by their mothers as "warm, permissive and fairly easy going." Mussen and Distler (1959) used the ITSC structured doll play as a measure of masculinity with kindergarten boys. The ITSC is a projective doll play instrument developed by Brown

(1956). The child is shown sets of sex-linked pictures and asked to indicate which one a sexually neutral figure called "It" would prefer. Female choices are given a score of "0"; male choices are given weighted scores. The obtained scores are summed to produce a scale with a range from 0 (very feminine) to 84 (very masculine). They found that boys scoring high in masculinity in their projective sex role responses perceived their fathers as more warm and nurturant than did low masculine boys. Further, they found that the boys higher in masculinity had more affectionate relationships with their fathers as reported by their mothers than the low masculine boys. Both findings were replicated in a similar study the following year (Mussen and Distler, 1960). In another study employing the ITSC as a measure of masculinity, Freedham (1961) found the masculine orientation of fifth grade boys or "paternal salience" determined by the selection of the father doll rather than the mother doll, to be related to both the father's nurturance and dominance as determined by interviews with the boys.

Mussen and Rutherford (1963) obtained mixed results with first grade boys. While masculine boys (assessed by the same ITSC) perceived their relationships with their fathers more positively than did the low masculine boys; no significant difference was found on maternal ratings of paternal nurturance.

Biller (1969) obtained results similar to the Mussen and Distler studies. He also found child-perceived father

nurturance related to projective sex role orientation (ITSC and draw a person). Anzimi (1964) found that masculine preference recorded on a questionnaire by college students was related to their concurrent ratings of their father's warmth.

In one of the few studies which utilized an objective measure of paternal qualities, Payne and Mussen (1956) assigned a questionnaire to the parents of junior and senior high school students. Boys with a high number of identical responses to their father, termed "highly identified", were more masculine in their responses to the questionnaire. Their fathers' responses indicated them to be more rewarding and affectionate.

A number of issues need to be examined before drawing conclusions from the research reviewed above. The first such issue is methods of measurement employed. Most of the studies encountered in the area of filial masculinity have relied to a great extent on the It Scale for Children (ITSC) to assess sex role orientation. In light of findings by Brown (1957), the developer of the instrument, and by Sears, Rau, and Alpert (1965) this scale would not appear to be the best measure of sexuality. In a study conducted to reveal process by which sex roles are developed, Brown (1957) found, using the ITSC, that girls from the first gade through the fourth showed a "stronger preference for the masculine role than for the feminine." Rather than questionning the validity of an instrument which describes girls of

such a wide age spread as being masculine, Brown concluded that girls pass through a masculine phase in their development. The appropriateness of the instrument and the labels it places on subjects must therefore be questioned.

Sears, Rau, and Allpert (1965) further observed that any doll play on the part of boys is associated with femininity as measured by Behavioral Unit Observation, a method of observing instants of behavior in non-doll-mediated play. The role taken in the doll play was unrelated to the behavior ratings.

The use of other projective measures, such as the draw-a-person or the TAT in assessing a child's sexual orientation, or the use of the Rorschach in the case of the parents is also flawed by inadequate behavioral reference. Of the few studies which use actual behavior as the basis of scores, none was encountered which provided inter-rater reliability data.

The lack of independence in measuring filial masculinity and perceptions of parents is an equally serious flaw in the methodologies of many of the studies. One is left, after studying the results, asking the question, "Does having the perception of one's father as a nurturant parent contribute to masculine development in males, or is such a perception of one's father merely another manifestation of the pre-existing masculinity?" The research to date provides no answer.

While evidence concerning the importance of paternal

nurturance in the development of filial sexuality is methodologically weak, the indications are sufficient to call for further research. Both the instruments used to assess sexuality and the concept itself should be examined. More fluid definitions of sexuality have been offered by Lefkowitz (1962) and Kelly and Worell (1976). Lefkowitz (1962) suggested that sex role functioning should be assessed in terms of what is typical or atypical of one's own sex rather than referencing behavior in terms of the opposite sex. A different approach has been advocated by Kelly and Worell (1976). They called for a conceptualization in which masculintity and femininity are seen as two independent dimensions. According to their reasoning, an individual is fully capable of "masculine" behaviors and attitudes, such as aggression and an interest in sports, while simultaneously demonstrating "feminine" interests and attitudes. The interaction of the two traits allows for the placing of the individual in one of four categories, Masculine (high M, low F), Feminine (high F, low M), Indeterminant (low M, low F), or Androgynous (high M, high F). Kelly and Worell considered that androgyny is the most healthy sexual configuratuon because it signifies a greater repetoire of behaviors available to the individual.

They assigned the Berlins-Welling ANDRO Scale to college students as well as the Parent Behavior Form. They found that androgynous subjects reported more parental warmth and cognitive involvement than any of the other

groups. The indeterminants reported the least. The use of such approaches as those suggested by Kelly and Worell or Lefkowitz may offer both more interpretable and more consistent results. In addition, where possible behavioral unit observation should be used rather than projective techniques or questionnaire data.

The preceding review indicates that some evidence has been found which relates paternal nurturance with other filial developmental characteristics in addition to sexual orientation. An examination of research directed towards other areas of functioning is in order.

Intellectual functioning and scholastic achievement

Paternal nurturance has also been found related to other significant filial developments such as intellectual functioning in children.

An early study in the field is one by Seder (1957; cited in Dyk and Witkin, 1967). She found that fathers of field independent boys (assesed by the rod and frame test, body adjustments) had fathers who were more available in that they participated in a variety of activities, such as sports and travel. Cross (1966) found high conceptual level adolescent boys to have fathers higher in warmth and acceptance. In that study, conceptual level was assessed by means of a sentence completion instrument containing items such as:

1. Rules....
2. When I am criticized....

Paternal attitudes were measured by the Parental Attitude Research Instrument (PARI).

Busse (1969) also employed the PARI in conjunction with direct observation of 96 black parents individually spending 16 minutes teaching their five year olds four tasks. A number of categories, both verbal and non-verbal, were scored, such as smiling, frowning, number of words used, and pointing. Busse analysed the relationship of these parental qualities with what he termed a "flexible thinking factor", derived from a number of measures administered to the children, including the embedded figures test. Among the relationships found were direct associations between filial flexible thinking and total words used by father, paternal love, power, and use of warm sympathetic standards. Further, the advocacy by the father of rigid, absolute standards on the PARI showed a negative linear relationship with flexible thinking in sons. Both fathers and mothers of flexible boys were assessed as non-authoritarian. Radin (1972) observed the interaction between fathers and four year old sons, and rated the fathers on the level of nurturance and restrictiveness displayed, using the Cognitive Home Environment Scale (Radin and Sonquest, 1968). The children were administered the Stanford Binet Intelligence Scale (S-B) and the Peabody Picture Vocabulary Test (PPVT). Paternal nurturance was found to correlate .62 with the S-B IQ and .58 with the PPVT IQ. In a longitudinal follow-up (Radin, 1973), the previously measured paternal nurturance predicted

IQ's with correlations of .55 and .52 respectively. Restrictiveness correlated negatively and weakly with correlation coefficients ranging from a significant -.35 to a non-significant -.20. In further studies using boys and girls, Radin and Epstein (1975) used the S-B and standardized Piagetian tasks. For boys in their sample they again found nurturance positively related to cognitive competence and restrictiveness negatively related. Curiously these paternal characteristics were unrelated to intellectual functioning in girls. Radin (1976) concluded that acquisition of cognitive competence was in part a fuctioning of modelling. She stated:

> As boys identify with their fathers, they emulate not only the attitudes, values, roles, gestures, and emotional reactions, but problem solving strategies, thinking processes and vocabulary as well (p. 242).

Cognitive functioning in boys has also been found related to child-perceived fatherly warmth. Dyk and Witkin (1965) found 10 year old middle class boys assessed to be field independent, were more likely than field dependent boys to report in TAT stories a warm father-son relationship. No further data were reported on the relationship, since the study was primarily investigating maternal relationships with boys.

Heilbrum and others (Heilbrum, 1971; Heilbrum, Harrel and Gillard, 1967; Heilbrum, Orr and Harrell, 1966) have also found cognitive functioning related to child-perceived paternal nurturance and flexibility. They used the

Wisconsin Card Sorting Test to measure the conceptual performance of high school and college males. Poor conceptual performance was found to be associated with the son describing his father as highly controlling and low in nurturance on both the PARI and the Parent-Child Interaction Rating Scales.

School achievement has also been found to be statistically related to both researcher-measured and child-perceived paternal nurturance.

Teahan (1963) studied the attitudes of parents of underachieving college freshmen, male and female. All the students had done well in high school and on the College Qualification Test. Mothers, fathers and students competed the Parental Attitude Scale, a questionnaire composed of 45 items taken from Shoben's Parental Attitude Survey. Three qualities were measured: possessiveness (P), dominance (D), and ignoring of children (I). Fathers of the low achieving boys were found to score significantly higher on P, indicating a lack of willingness to allow their sons to do things for themselves.

Andersland (1968) studied the responses of 200 mothers and 83 fathers of grade 11 males and females to the Semantic Differential Rejection Scale (SDRS). Underachievement of the children was defined in terms of grade point average below expectations based on the California Test of Mental Measurement. The study found that same-sex parental relationships are more closely associated with school

achievement than are opposite sex relationships. Contrary to previously reported studies, rejection was found unrelated to IQ.

Parents of achievers appear to have a deeper empathic insight into their child's world. Peppin (1963) asked sixth grade children to complete a questionnaire, the Behavior Rating Schedule. He then asked both parents to complete the same questionnaire two times; first as they felt it best described the child, then as they believed the child would. Fathers (and mothers too) of students defined as achievers (better than their grade level on a general academic achievement test) were more accurate in responding in the manner of their children than were parents of underachievers. On measures of parental attitude, the parents of achievers also indicated greater acceptance of their children and showed a less critical attitude.

Students' perceptions of their parents have also been found to vary with school achievement. Using a sentence completion technique to assess high school students' perceptions of their relationships with their fathers, Kimball (1952) observed that underachieving boys reported poorer relationships with their fathers than did a control group drawn at random.

Like Peppin (1963), Shaw and White (1965) also used a methodology of family members completing a questionnaire as others might. They used the method with families of tenth and eleventh grade over- and under-achievers to assess

identification. Both groups of children had IQ's over 110. The achievers had a grade point average of over 3, while the under-achievers were below 2.7. The instrument used to assess identification was the Sarbin Adjective Checklist. Both parents of children in the study were asked to complete the checklist twice--once to describe themselves, and once to describe their sons. The boys completed it three times so as to describe self, father, and mother. Among the findings on the study were that achievers "identified" more with their fathers than did under-achievers with their fathers. Their self descriptions were more similar to their descriptions of their fathers than was the case with the underachievers. Further, the achievers and their fathers were more similar in self descriptions than were the underachievers and their fathers.

In another study relating students' perceptions of their parents with scholastic achievement, Cross and Allen (1969) had 81 college undergraduates complete the Children's Report of Parental Behavior Inventory (CRPBI). They found that ratings of fathers' acceptance level was positively correlated with grade point average.

Moral Development

Moral functioning of children has also been analysed with respect to correlative parental characteristics. Early studies focussed on the familial correlates of delinquency. Amongst the best of these is the longitudinal study of Glueck and Glueck (1950, 1968). They assessed a wide

variety of personal and familial characteristics of 500 delinquents (D) and 500 non-delinquents (ND), matched for family income and area of residence.

The study, begun in 1939, collecting data on 9 to 17 year olds, was completed in 1965 with the follow-up of the subjects to age 31. The final sample contained 438 delinquents and 442 non-delinquents. The behavioral and psychological maladaptiveness of the delinquent sample was found to continue with virtually no abatement into adult life.

A wide variety of family differences were found. At the most overt level, delinquents were more likely than non-delinquents to have fathers who were themselves delinquents (D 66.2%, ND 32%) or who were alcoholics (D 62%, ND 39%). The situation is not the simple "like father--like son" condition it might at first seem. There were also father-child relationship differences. The delinquents were far less likely than the non-delinquents to have fathers rated by researchers as having "warmth, sympathy, and consistent affection for their sons" (D 40%, ND 80%). Further, the delinquents' fathers were more likely than the fathers of non-delinquents to be "overstrict" (D 25%, ND 10%), and inconsistent (D 41.6%, ND 17.9%). As with all correlational studies, a cause and effect relationship cannot necessarily be inferred. The fathers' behaviors may be in reaction to the pre-existing delinquency of their sons.

These findings tend to be confirmed by McCord and McCord (1963). They studied 255 boys in deteriorated urban

areas in the years 1939 to 1945. The boys were rated on a number of "character traits", includin aggressiveness and assertiveness. In 1955, a check was made to determine which boys in the sample had criminal records. Those who did were termed anti-social. Two-way trait combinations could then be studied, such as aggressive--antisocial. This group, the aggressive-antisocial, was found to have had parent-child relationships characterized by conflict, threats, little show of approval, open dislike expressed by father, greater punitiveness, and little adult supervision.

While the above studies reveal concommitants of gross deviations in moral behavior, they shed little light on the more subtle individual differences encountered in a normal population. Rutherford and Mussen (1968) studied the perceptions of four and a half year old boys in doll play concerning their parents. The children were asked to use dolls to act out the completion of stories such as:

> It's late at night. Everyone is asleep. Suddenly, the boy has a bad dream and wakes up very frightened. What do you think he will do? Show me.

The assumption underlying the measure is that the child's description of the hero reflects his own self concept, and what he says about the parent dolls reveals his attitude towards his own parents. Stories were rated according to qualities attributed by the children to their parents, including nurturance, punitiveness, and power assertion. The children were also assessed for generosity. This was done in two ways. First, teachers rated their

daily behavior as generous or non-generous. In addition, the children were given 18 candies and asked to share. Those who shared many (15 or more) were termed generous. Those who kept all were termed non-generous. The children were also assessed for competitiveness and other interpersonal qualities. The generous children were found to be kinder, less hostile and less competitive. They saw their fathers as more nurturant (warmer and more sympathetic). Rutherford and Mussen conclude, perhaps somewhat prematurely:

> Generosity appears to be part of a pattern of moral behavior acquired through the boy's identification with his father (p. 753).

Hoffman and his colleagues have conducted a number of studies investigating the relationship of a child's moral development with parental factors. Hoffman consistently points out (Hoffman, 1970, 1971a, 1971b; Hoffman and Saltzstein, 1967) that moral behavior should not be considered to be a unidimensional phenomenon. He suggested there are a number of different indicators of moral development. Guilt, internalized moral judgements, overt reactions to transgressions (such as confession or acceptance of blame) consideration or generosity toward others, resistance to temptation, and conformity to rules are the indicators he identified.

Hoffman (1960) hypothesized, in accordance with Allingsmith and Greening (1955) that unqualified assertion of parental power toward the child would lead to the child

asserting power in relations with other children. This would, he suggested, increase the child's resistance to peer pressure and temptation. In a study of nursery school children, he found that ratings of parental power assertions based of maternal interview were unrelated to ratings of the child's assertiveness with peers. In a later study (Hoffman, 1963), based soley on interviews with mothers, he found that parental acceptance of the child was related to a positive afective orientation on the child's part, characterized by the ability to control impulses, recognition of logical consequences and awareness of the needs of others.

Hoffman and Saltzstein (1967) related four criteria of moral development to parental practices. As a measure of guilt, they used two subjective story completions involving a sympathetic same-sex child who has committed a transgression. The reactions ascribed to the protagonist are assumed to reflect the internal reactions (although not necessarily the overt behavior) of the respondent to his own transgressions. Overt reaction to transgressions (*eg*. confession, or acceptance of blame) was assessed by reports by teachers and a questionnaire completed by mothers. Internalized moral judgements were measured using Piagetian-type moral judgements problems, and finally, consideration for others was rated by other children in the class who voted for persons "most likely to care about another child's feelings". Their ratings of parental practices were based on children's answers to overt questions and on interviews with both parents.

Parents were rated on three categories: power assertion, use of guilt induction, and love withdrawl.

Moral development was found quite consistently associated with power assertion and frequent use of induction by both parents. Love withdrawal related only infrequently and inconsistently with moral development indicies.

Brown (1978), a student of Hoffman conducted a study which partially supported the findings of Hoffman. Investigating the same four indicies of moral development in black children, he found that guilt induction (reasoning) was the strongest correlate of guilt, determined by story completion. Other parental qualities (power assertion, love withdrawl) were unrelated.

Maddock (1975) employed the Parent-Child Research Questionnaire with adolescents. This instrument yielded 13 scores for father characteristics and 12 for mothers. No relationship was found between any parental characteristic and children's scores on the Moral Develoment Questionnaire.

Hower and Edwards (1979) had 144 college students complete a 40 item parental practices inventory, which identified several parental characteristics. In addition, the subjects completed a 137 item self report questionnaire to assess moral character. Perceived parental attitudes of acceptance, inductive discipline, and lax control positively correlated with socialization and empathy, while power assertion bore a negative relationship. Holstein (1970)

using Kohlberg moral reasoning tasks, independently assessed the level of moral reasoning of eighth graders and their parents. He then asked families to discuss their differences in moral choices and attempt to resolve them. He found that the length of the ensuing discussion was related to the parents' moral reasoning level but not the children's. The amount of time the child was allowed to talk in the discussion, interpreted as an index of parental encouragement of the child, was positively related to the child's moral development level. Kohlberg measure of moral judgements.

The literature related to family concomitants of children's moral development has produced results which are far from consistent. Nevertheless, there seems to be ground to guardedly maintain the hypothesis that a relationship exists between paternal warmth, involvement, acceptance, and encouragement with his son's moral development. This relationship may not be as strong, however, as that between the mother's display of such qualities and measures of the child's moral functioning.

Implications of the Research

The prime implication of the above research to the Uncles at Large Program is that the paternal qualities identified as likely related to a child's develoment, can be hypothesized as desirable qualities for volunteers in the Uncles at Large Program to possess. This conclusion is arrived at because the basic purpose of the volunteer is to

function partially in the capacity of a father surrogate.

The conclusion is supported also by counselling literature. An examination of the paternal qualities of nurturance, involvement, availability, and acceptance most often identified as salient, bear a close resemblance to the facilitative dimensions of empathy, warmth, and genuineness described extensively in counselling literature. At first considered "necessary and sufficient" to effect change in the client during counselling (Rogers, 1951, 1961; Carkhuff, 1969; Truax and Carkhuff, 1967), these qualities were viewed as essential in other fields as well, such as nursing, and teaching. While these conditions are no longer widely deemed sufficient, they are still viewed to be the cornerstone on which all helping activity is based.

Since these qualities seem related to significant developments in children, and similar characteristics are identified in the helping literature as essential, it would appear appropriate to hypothesize that applicants to the Uncles a Large Program who indicate in interviews and other appraisal measures to have the capacity for nurturance, warmth, and involvement would be more successful in the program.

D. Summary

Two major areas of research have been covered in the preceding literature review: predictive studies in the volunteer sector and paternal qualities associated with

desired filial outcome. The research in the first area demonstrates little in the way of unity of approach or progression of knowledge. Rather, the volunteer sector studies appear to differ widely, both in terms of methods employed and results obtained. Methodologically, differences can be seen in the independent measures used, analyses applied and criteria employed.

Predictor variables have included general rating scales (Dicken, 1969; Guthrie and Zektick, 1967; and Mischel, 1965), specific ratings (Belanger, 1972, and Fenicheli, 1978), and test data (Dicken, 1969; Guthrie and Zektick, 1967; Mischel, 1965; and others). Methods employed have included simple correlational methods (Evans, 1976; Belanger, 1972; and Mullens, 1973) t tests (Nadel, 1969), discriminant function analysis (Evans, 1976), and multiple regression analysis (*eg.* Dicken, 1969; Mullens, 1973).

Multiple regression is a widely used method for two primary reasons. First, it offers the potential of greater power than simple correlation methods and t tests. Second, multiple regression allows for the use of subtler, more continuous criteria not possible in the dichotomous techniques of t tests and discriminant function analysis. Such continuous variables may contribute to more than a yes--no selection decision. Applicants can be selectively assigned to more or less challenging placements, or provided with different supervisory schedules or training according to indicated potential.

Criteria have, in all cases been performance ratings, either made by the researcher, peers or the volunteer's supervisor. Some studies have used global ratings (Dicken, 1969; Guthrie and Zektick, 1967; and Mischel, 1965), others have made use of more specific behavioral ratings (Belanger, 1972; Herrick, 1975; Mullens, 1973).

Results obtained are highly inconsistent. While Guthrie and Zektick (1967) and Dicken (1969) found that global ratings predicted performance in the Peace Corps, Mischel (1965), also using global ratings, and Herrick (1975), using specific ratings, failed to find a relationship with volunteer performance.

The same inconsistencies apply to findings using psychometric data. Conventional scales of the MMPI have been found related to volunteer success by Evans (1976), however other attempts have largely failed (Dicken, 1969; and Guthrie and Zektick, 1967). Special scales of the MMPI such as the Es scale have been found meaningfully related to performance by Mischel (1965) and by Dicken (1969), but not by Guthrie and Zektick (1967). Items of the MMPI predicted performance in an unreplicated study by Evans (1976), as did CPI items in a study by Belanger (1972).

Most of the predictive studies reviewed involved the use of small samples. This may partially account for the contradictory nature of results. Although no definitive conclusions can be reached on the basis of the studies discussed here, the presence of some significant relationships

suggests that further research is in order. The MMPI appears to hold some promise for analysis, both at the scale and item level.

The studies concerning paternal influences on filial functioning show a unity of purpose which is absent in the predictive studies discussed above. Focussing primarily on the processes of imitation, identification, and role modelling, research on the father has stressed strongly the contribution of paternal nurturance. This quality has been found associated with a boy's sexual orientation (*eg.* Sears, 1953; Mussen and Distler, 1959), cognitive development (*eg.* Radin, 1972; Dyk and Witkin, 1965), school achievement (*eg.* Andersland, 1968), and moral development (*eg.* Rutherford and Mussen, 1968).

While results are somewhat inconsistent, and methodologies often questionable, there seems to be merit in hypothesizing that a relationship does exist between the display of nurturance on the part of the father and the filial characteristics described. It can be further hypothesized that highly effective volunteers in a program like Uncles at Large would demonstrate similar characteristics.

E. The Minnesota Multiphasic Personality Inventory

The MMPI was used by the counsellors in Uncles at Large primarily as a screening out measure. There is solid support in the literature for its use in this manner. A considerable volume of literature, summarized in Dahlstrom,

Welsh, and Dahlstrom (1975) indicates the power of the MMPI to identify individuals indicating psychopathology. While differential clinical diagnosis using the instrument may be dissapointing, that is an issue of little concern given the purpose of its use at Uncles at Large. As a general indicator of maladjustment, the MMPI has been found to perform very well. Such detection has been accomplished using the conventional clinical scales of the inventory, and by means of scales developed from the MMPI item pool for specific tasks. There seems little question that the MMPI, both at the scale and the item level, has the potential to identify idividuals showing poor mental health.

Some research has been done to determine if a relationship exists between the scores obtained by parents on the clinical scales of the MMPI and the presence of emotional disturbance in children. In a review of seven such studies, Lachar and Sharp (1979) found that the profiles of parents of emotionally disturbed children were found to differ significantly from the profiles of parents in a control group.

> Tabulation of the frequency of obtained significant differences across the seven cited studies revealed mothers of behaviorally disturbed children were uniformly found to have higher mean scores on *D*, and *Hy*; five to six studies documented higher mean scores on scales *Hs*, *Pd*, *and Pa*; and four studies found higher mean scores for scales *Pt* and *Sc*. Tabulation of the results of these analyses of MMPI scales for fathers revealed that in five to six studies, the fathers of behaviorally disturbed children were found to have a higher mean scores on scales *Hs*, *D*, *Pd*, and *Sc*; and four studies found higher mean scores on *Hy* (p. 208).

Lucher and Sharp pointed out, however, that the differences observed were not great. In no case was the difference in mean scores more than the standard deviation of the scale. In addition, one cannot conclude on the basis of the relationships observed that parental disturbance leads to or causes disturbance in children. Nevertheless, in a program in which the counsellors act as a guardian of the interests of the child, the MMPI indicates the potential to identify volunteers whose relationships with children may be damaging.

In addition to its role in screening out unsuitable appliants, the MMPI also has potential for identifying personality strengths. Elevated scores on scale 5 of the MMPI, Masculinity-Femininity (Mf), has been found related to ratings of "psychologically complex" and "inner-directed" (Gough, McKee, and Yandell, 1955). Other positive characteristics attributed to males scoring high on Mf are: ambitious, capable, cautious, clear-thinking, clever, curious, fair-minded, logical, mature, and tolerant. Similarly, low scorers on scale 0, Social Introversion, tend to be described as versatile and sociable. They are further termed expressive, colorful, and sensitive to others.

As well as the standard scales on the MMPI, several others have been developed to predict positive personality attributes. Barron (1953) developed such a scale, termed the Ego Strength Scale (Es) to predict response to psychotherapy of psychoneurotic patients. The 68 item scale was

found to discriminate effectively between those rated as successful in therapy and those who were unsuccessful. The pre-therapy characteristics of the two groups are described by Barron (1980) as follows:

> *Improved*: (a)good phsical functioning; (b)spontaneity, ability to share emotional experiences; (c)conventional church membership, but non-fundamentalist and undogmatic in religious beliefs; (d)permissive morality; (e)good contact with reality; (f)feelings of personal adequacy and validity; (g)physical courage and lack of fear
> *Unimproved*: (a)many and chronic physical ailments; (b)broodiness, inhibition, a strong need for emotional seclusion, worrisomeness; (c)intense religious experiences, belief in prayer, miracles, the Bible; (d)repressive and punitive morality; (e)dissociation and ego-alienation; (f)confusion, submissiveness, chronic fatigue; (g)phobias and infantile anxieties (p. 268).

In an independent study, the Es scale was also found related to "general energy level" (r=.38) and "persistence, resolution, perseverance, *directed* energy" (r=.41) (Barron, 1980). Other correlations, low but positive, were found with self confidence, poise, and breadth of interest. Negative correlations were noted with submissiveness, effeminacy and intraceptiveness. Barron (1980) also noted the scale has been found positively related to IQ, tolerance, and lack of prejudice.

Other scales intended to identify positive personality characteristics have also been developed. These include Dominance (Do), and Responsibility (Re). Both of these scales can be hypothesized as potential identifiers of strong performers in the Uncles at Large Program. Es, Do, and Re are all reported by most automated scoring systems.

The evidence presented suggests that at the scale as well as at the item level, the MMPI demonstrates the potential to assist both in the screening out and the screening in of applicants to a voluntary program such as Uncles at Large.

F. Personal Orientation Inventory

The Personal Orientation Inventory (POI) (Shostrum, 1963) was developed to measure concepts espoused by such writers a Maslow, Rogers, and Fromm as characteristic of fully functioning or *self actualizing* individuals. The instrument is composed of two primary scales and ten sub-scales. the two primary scales are termed Time Competence (TC) and Inner Directed (I). *The Handbook for the POI* described the two scales as follows:

> *Time Competence* reflecting the degree to which the individual lives in the present rather than the past or future. Time Competent individuals have faith in the future and can apply past experience well in the present. Time incompetent individuals tend to live in the past, with regrets or nostalgia, or in the future with idealized goals or fears.
> *Inner Directed* measures whether the individual's "support orientation" is characteristically "self" or "other". Inner Directed individuals are motivated by internalized principles, while other directed persons are guided by such forces as peer pressure or fear of punishment.

The ten sub-scales are intended to measure other qualities of self actualizing individuals, including Self Actualizing Value (SAV) Spontaneity (S), Self-Regard (Sr), Self-Acceptance (Sa), and Capacity for Intimate Contact (C). On the surface, the POI would appear to relate to the qualities

of interest in the Uncles at Large Program.

Some evidence has been found to support claims that the POI does measure characteristics associated with self actualization. Shostrum (1964) found that subjects nominated as actualizing by judges, scored significantly higher on all scales and sub-scales of the test. Knapp and Michael (1968) found scores significantly below the mean in a hospitalized psychiatric patient sample. Advanced therapy clients have been found to score higher than beginning therapy patients on POI scales and sub-scales (Shostrum and Knapp, 1966). McCain (1970) and Jansen, Bonk, and Garvey (1973) found counsellors rated as competent or effective, tended to have elevated profiles.

Teacher effectiveness has been found indirectly associated with POI scores. Dandes (1966) administered the POI, the Minnesota Teacher Attitude Inventory and other measures to a sample of teachers. The MTAI had previously been found to be related to teacher effectiveness. When the sample was dichotomized at the mean on the 2 primary scales of the POI, TC and I, Dandes discovered a significant relationship between the POI and the MTAI measures of permissiveness and liberalism. Significant negative correlations were also noted with measures of authoritarianism and dogmatism.

While there are some signs that the POI can identify values and behaviors suggested to be related to interpersonal functioning, a number of issues need to be examined. The individual scales and sub-scales are poorly

validated. Most studies of the inventory examine the general elevation of the profile rather than focus on specific scales. The meaning and validity of the various scales are therefore restricted to conceptual definitions without empirical verification.

POI test construction exacerbates this validity problem. The two primary scales, TC and I account for all 150 items on the inventory. The remaining 10 sub-scales contain between 9 and 32 items each, all of which are found on either TC or I. This high item overlap makes high inter-correlations of scales inevitable. The sub-scales themselves overlap each other to a great extent. The Sy scale has seven of its nine items in common with SAV.

There are, therefore, some indications that the POI can measure constructs of interest to the counsellors in the Uncles at Large Program. The dilemna regarding the scale construction and validation suggests that the test should be viewed as a research instrument until more precise validation is conducted. Also indicated is the desirability to conduct analyses at the item level to determine if items can be more effectively grouped than in the manner chosen by the test author.

G. Pilot Study

An intitial investigation was carried out in July, 1976 to assess the ability of the ability of the MMPI to discriminate between successful and unsucessful volunteers in the

Uncles at Large Program (Seaman, 1976). Twenty subjects who failed to maintain their commitment and withdrew prematurely or were asked to withdraw, were compared to twenty subjects who were rated highly by their supervising counsellor. The MMPI profiles of the subjects were analysed for the number of K corrected scales (discounting Mf) elevated above a T score of 65.

The highly rated volunteers had a mean of .95 elevated scales. The unsuccessfuls averaged 1.6 elevations. A t test on the differences between means was performed on the mean number of elevations for the two groups. The resultant t of 2.026 was found to be significant beyond the .05 level. By using a cut-off score of two elevations, eight of the twenty unsuccessful volunteers were correctly identified, with only two of the highly rated volunteers falsely categorized.

While the results are promising, they provide little in the way of practical application. First, a majority of the unsuccessful volunteers were still identified as successful. This margin of error would be acceptable if those successful uncles identified as unsuccessful were few. This might at first appear to be the case, since in the study, only two highly rated volunteers were so identified. It must be kept in mind, however, that the sample in the study represented the two ends of the performance continuum. It was hypothesized that the incidence of both type 1 and type 2 errors would be unacceptably high if the criterion cut off score

were employed in actual practice.

To investigate the discriminatory power of the cut off score in the full range of volunteers in the program, the profiles of a randomly selected group of twenty volunteers was examined. Using the above cut off, nine of the twenty would be identified as unsuccessful. This ratio is out of proportion with the actual number of failures in the program, further, the classifications of subjects in the sample bore limited relationship with the actual performance of the volunteers in the sample as rated by program counsellors.

A second limitation of the approach taken in the pilot study is that use of a binary criterion limits the uses to which even significant findings can be put. Such a research strategy may, if successful, assist in the simple accept-reject decision in screening volunteers. It offers little aid in other critical selection decisions such as the differential assignment of volunteers to challenging or more routine matches, nor can the applicants' test information be used to determine the level of training or follow up schedule which should be employed for that individual. For predictive research to contribute to the full range of selection decisions, the use of a criterion which assesses the full range of performance is in order.

The pilot study suggested, therefore, that while the MMPI shows promise as an instrument capable of predicting the performance of volunteers, the power and utility of the method employed in the pilot study appears insufficient to

be of practical value in screening decisions. More detailed analysis with a larger sample size was deemed appropriate.

III. Method

A. Research Questions

The present study addresses the relationship of personality assessment data, gained by means of administration of the MMPI and POI, and the subsequent performance of the test-taker in a voluntary endeavor.

Two approaches are taken in examining the statistical relationships of the test data and functioning as a volunteer in the Uncles at Large program. The first approach is a pragmatic attempt to maximize the predictive validity of a rating of the effectiveness of the individual as an "Uncle". This information can then be used in the decision to accept or reject the volunteer applicant on the basis of his probability of success. The statistical procedure most appropriate to accomplish this purpose is multiple regression. Both the objective and the statistical methodology are atheoretical in nature. The intent is to combine predictors in the most powerful combination, regardless of the face validity or the theoretical inter-relationship of the variables. Consequently, hypotheses are inappropriate, concerning which predictors will be entered into resultant equations.

The second approach taken by this study is a theoretical examination of the relationship between the test data and later performance. In this examination, the personality of the volunteer is related to the rating of his

behavior. The attempt is to determine what type of individual is most likely to contribute highly to the life of a boy in the program. The statistical procedure employed to accomplish this conceptual investigation is principal component factor analysis. Unlike multiple regression, factor analysis allows hypotheses to be made.

The review of the literature concerning paternal qualities suggested that filial development is facilitated most by a father who is nurturant, affectionate, attentive, and encouraging. Counselling theory generally indicates the consistent application of similar practices by a helper, contributes to positive growth in the helpee. The counsellors in the Uncles at Large program listed similar qualities as characterizing successful volunteers. It can be hypothesized, therefore, that a relationship should be found between these qualities and performance in the Uncles at Large Program. Such a relationship could best be revealed by the factor loadings discovered through factor analysis.

The hypotheses concerning factor loadings can be stated as follows:

1. The criterion of performance will load negatively on factors formed by the clustering of scales and subscales indicative of symptoms, such as depression anxiety, or aggression.

2. The criterion will load positively on factors comprised of scales and subscales suggesting the presence of growth processes, such as sensitivity, empathy, genuiness, and assertiveness.

B. Setting

Subjects in this study were volunteers in the Uncles at Large program in Edmonton, Alberta. This program seeks to enhance the life of boys from father absent homes by assigning a male volunteer as a one to one companion to the boy. The Uncle at Large is recruited from the general population, and is screened by means of personality testing, personal interviews, criminal record checks, and personal references. If considered eligible, he is asked to attend a compulsory orientation seminar, and invited to participate in optional training seminars. He is then assigned to a boy keeping in mind a number of factors. These include preferences stated by the applicant with regard to age, interests, or personality of the boy. Also taken into account are such things as the personality of the volunteer and the boy, and the distance the two live from each other.

C. Subjects

Subjects for the study were, in the case of the Minnesota Multiphasic Personality Inventory (MMPI), the first 150 volunteers screened after March, 1975, who remained in the Uncles at Large Program long enough to be given a Volunteer Performance Rating (VPR) by a supervising counsellor. The age range in this sample was from 18 to 56 with a mean of 29.2. A cross-validation sample was constructed using the next 25 volunteers who had been assigned the MMPI as a screening instrument and for whom a VPR was available.

These subjects, screened between January, 1978 and October, 1978, ranged in age from 19 to 54 with an average age of 28.

Subjects for the study of the Personal Orientation Inventory responses were the first 181 volunteers to complete the inventory and be given a VPR score by the supervising counsellor. They were applicants assigned the POI between January, 1977 and July, 1979. The cross-validation sample of 25, identical to the cross-validation sample used in the analysis of the MMPI, was removed, leaving 156 subjects in the POI derivation sample. This derivation sample was largely independent of the MMPI derivation sample, having only 19 subjects in common. The age range of the POI sample was 20 to 63 with a mean of 29.9. The same sample of volunteers was used in cross-validating results of the MMPI and POI analyses. This was done so as to make possible a determination of any increment in predictive ability using regression equations based on both the MMPI and the POI.

D. Dependent Variable

The two basic requirements in any attempt at prediction are, on the one hand, a quantity to be predicted, known as the criterion or dependent variable, and on the other hand, one or more variables to act as predictors or independent variables. In the present research, the determination of an appropriate criterion presented a particular problem. The difficulty stems from the need to objectify or make concrete

a human interaction which by its very nature is subjective.

A number of possibilities were examined. The longevity of the match was considered as a potential criterion measure of volunteer behavior, but was rejected because agency records showed that 60 to 80 per cent of matches ended due to such reasons as the volunteer or family moving, the boy turning 17 (the ceiling age for participation in the program), or the marriage of the boy's mother. Other quantitative measures, such as frequency of contact, and duration of each contact were also examined, but rejected because they did not appear to relate sufficiently to the human interaction which was of interest in the study. Other specific measures, such as improvement in the boy's functioning as determined by school grades, teacher rating or maternal report were rejected also, since the validity of attributing the cause of change (or lack of it) to the volunteer's intervention seemed too tenuous.

It was decided that the most appropriate criterion would be a rating by a volunteer's supervising counsellor. This rating--The Volunteer Performance Rating (VPR)--was developed to serve as the dependent variable for all regression equations.

The VPR was a rating on a 5 point scale (0 to 4), performed by the volunteer's supervising counsellor at a point between six months and one year after the date the match between the 'uncle' and his "nephew" occurred. The rating was global in nature, intended to measure the overall level

of functioning of the volunteer in the match. A rating of "0" signified a level of performance so poor as to be deemed potentially destructive to the boy to whom the volunteer is assigned. A rating of "4" indicated outstanding performance with a demonstrated positive impact on the child. A complete description of behaviors and qualities associated with the different ratings is seen in Appendix I.

Counsellors in the Uncles at Large program were individuals with university degees in various disciplines of the helping professions. Three of the six counsellors participating in this study had Bachelors degrees in social work, one had a Masters degree in Education, one possessed a Masters degree in Psychology and the remaining a Doctorate of Divinity. The latter two were certified psychologists. While the psychologists had administrative and supervisory responsibilities over and above the duties of the other counsellors, the caseload responsibilties were the same for all.

Counsellors were trained by the researcher (who was himself one of the counsellors) in the use of the VPR. This training took the form of mutual discussion of the scale and trial application of it to previous case descriptions, followed by further discussion. The training and practice were concluded in a single session of 3 hours. After completion of training, reliability checks were made. Each of the three counsellors employed at the time of the commencement of this study conducted ten follow-up interviews conjointly

with each of the other two counsellors. Immediately following the conjoint interview, the two counsellors independently rated the volunteers using the VPR. Inter-rater reliabilities were computed for each counsellor diad and an average calculated. All three reliability coefficients were equal to or greater than .60, with a mean of .77. Before the completion of the study, the original staff of three left over the course of a year, and were replaced with three new counsellors. These counsellors were also trained by the researcher in the use of the VPR, using the same method as used in the first group and inter-rater reliability calculated for the three diads. The average inter-rater reliability for this set of three was found to be .83. Because the personnel overlap was insufficient, no inter-rater reliability data are available across the two groups of counsellors. Inter-rater reliability data and calculations can be seen in Appendix II.

All VPR scores for the MMPI derivation sample were assigned by counsellors in the first group. In the case of the POI derivation sample, 137 of the ratings originated with the first triad, and 19 came from the second. Nineteen of the 25 VPR scores for the common cross-validation sample came from the first set of counsellors, with the remaining 6 from the second.

Rating was customarily done in a personal interview with both the volunteer and mother of the boy present. In other cases, rating occurred upon termination of an

unsuccessful match after consultation with one or both of the parties in person or by telephone. The interview was usually the first annual follow-up, but in some cases may have occurred somewhat earlier or later.

E. Independent Variables

Both items and scales on the MMPI and the POI were used as independent variables in various separate analyses. These two inventories were part of an evolving battery of tests administered to potential volunteers.

From the inception of Uncles at Large, the MMPI was used, sometimes in conjunction with other psychological tests, including the Sach's Sentence Completion Test and Cattell's 16 Personality Factor Test (16PF), as an important component in the screening procedures of the agency. In 1967, the MMPI was seen by the professional staff of the Family Service Association of Edmonton, the original administators of the program, as an instrument capable of aiding in the identification of those individuals displaying symptoms of psychopathology. Since most forms of psychopathology are virtually defined by the disturbed nature of the individual's interpersonal relations, applicants so identified were considered poor risks as volunteers and were screened out.

Prior to January, 1977, subjects in the primary MMPI sample were given the inventory following the administration of the 16PF. After that date, the use of the 16PF was

discontinued and replaced by the POI. Administration of the MMPI followed the POI after that date. The tests were given by trained counsellors under the supervision of a certified psychologist, according to standard procedures, in either an individual or small group administration. While the MMPI was used actively in the selection process, the POI was administered as a blind research instrument for the purpose of this study. In fact, the POI remained unscored until the time of data analysis for this research.

F. Procedure

The aim of this research project was twofold: the maximization of prediction of volunteer performance, and the facilitation of a theoretical analysis of the qualities necessary for a high level of functioning in the Uncles at Large program. Two statistical procedures were therefore used. First, stepwise multiple regression was used to develop equations to predict the volunteer's performance as measured by the VPR. This statistical procedure was applied to scales of the MMPI and the POI as well as to the the item pools on both of these instruments.

The second procedure used, to enable a theoretical examination of the data, was factor analysis. This procedure was applied to the VPR together with the validity scales and 10 clinical scales of the MMPI in one analysis and to the VPR and the 12 scales of the POI in a second. A detailed description of the methodology of the analyses

conducted follows.

Multiple Regression

Analysis of MMPI

Scales

The three validity scales, ten clinical scales, and eleven "research" scales of the MMPI were analysed by means of a stepwise multiple regression. The analysis was performed with a Division of Educational Research Services, University of Alberta program, DERS, MULR06, using as a criterion for inclusion or deletion of items, a p value of 0.05. Cross-validation was performed by calculating the predicted VPR for the cross-validation sample and correlating these derived scores with the actual VPR scores.

Items

A stepwise multiple regression was also employed in analysing the relationship of the MMPI items to the criterion (VPR). Responses to the items of the MMPI are not numerical in nature, but rather a true or false designation. To conduct this study it was necessary to quantify the individual responses. To accomplish this, answers of "true" were assigned a value of "1", while "false" responses were designated by "2". Questions to which a subject made no response (*ie.* answered neither true nor false) were treated as missing data.

Since the MMPI has 550 items (not counting duplications) and since there were only 150 subjects in the sample, it was not possible to perform a single regression analysis

on the entire item pool.

Random Selection of Item subsets. The method chosen to deal with the problem of the number of items relative to the number of subjects included in the multiple regression analysis, involved sub-dividing the total item pool into subsets of manageable size. This was the method chosen to conduct the analysis. Six subsets of items were constructed, using a table of random numbers to assign items to the subsets. The number of items in the subsets varied between 91 and 94, averaging 91.7. Stepwise multiple regression analyses were performed on each of the six item subsets, using the "Regression" sub-program of *Statistical Package for the Social Sciences* (SPSS) (Nie, Hull, Jenkins, Steinbrenner, and Brent, 1975). The first 12 to 15 items in the six resultant regression equations were then combined into a final set of items. A stepwise multiple regression analysis was then conducted on the 96 items in this final item pool, using the same SPSS program, with the criterion for inclusion of variables into the equation set at F=1.5.

The resultant regression equations were then used to generate predicted criterion scores (predicted VPR) for the 25 subjects in the cross-validation sample using 36, 30, 20, 15, and 10 items in the equations. The predicted VPR scores were then correlated with the actual VPR scores as a measure of the validity of each of the derived equations.

Analysis of POI

Scales

Stepwise multiple regression analysis was performed also on the 12 scales of the POI (raw scores). The analysis was performed using the previously mentioned DERS MULR06 Program, also with a criterion for inclusion or deletion of variables set at p=.05.

Cross-validation was not performed as no scale was found to correlate significantly with the criterion (VPR).

Items

Responses to items on the POI were quantified in a manner similar to that used with the MMPI items. In the case of the POI, the individual chooses between two statements, according to which he feels is true. A value of "1" was assigned when the first statement was selected, with the choice of the second statement represented by a value of "2". As in the case of the MMPI, non-responses were treated as missing data.

As stated above, in discussing the analysis of MMPI items, it is necessary, in order to perform a multiple regression analysis, to have more subjects included in the analysis than variables. This created a problem with the POI similar to that encountered in the case of the MMPI. Although POI responses and criterion scores were available for 156 subjects, a count of subjects leaving one or more POI items unanswered, indicated 57 to have such missing data. Since these subjects would be deleted by the multiple regression analysis, the effective number of subjects in a single analysis of all items would actually be only 99,

necessitating, as in the case of the MMPI, some technique to raise the number of subjects above the number of variables in any analysis performed. Because the MMPI item pool is very large, only one method of dealing with the number of variables was viable. Items were randomly pre-grouped into several sub-sets. This method was also available for use in the analysis of POI items. In the case of the POI, however, a second means of overcomming item size was possible, by reason of the more manageable size of the POI item pool. A reduced set of items could be selected for inclusion in a single analysis on the basis of correlation with the criterion. A description of both of these methods as they apply to the POI follows.

Random Selection. Three subsets of 50 items each were randomly selected. Separate stepwise regression analyses were performed using DERS MULR06 on the three item subsets. The first 16 or 17 items from the three resulting regression equations were then combined in a pool of 50 items to which a final stepwise multiple regression analysis was applied, using a criterion for inclusion or deletion of a varible, a p value of .05.

Predicted criterion scores were calculated for the cross-validation sample using regression equations with 24, 20, 16, and 10 items. The predicted criteria were then correlated with the actual criteria scores (the VPR) as a measure of the validity of the derived equations.

Selection by Correlation. Since the number of items on

the POI is small enough to be workable, the method of pre-selecting items by means of correlation coefficients was also employed. Correlations were calculated between each POI item and the VPR. Items were first selected for inclusion in the analysis which had a correlation with the criterion (the VPR) of | .15 | or greater. This represented a p value of approximately .10. With such a liberal criterion for initial inclusion, it was felt that all primary predictors would be included. To capture supressor variables, correlations were calculated between the 13 items identified and the remaining items in the POI. Items were then added to the item pool which correlated with the previously selected items with a value of | .20 | (p=.05) or greater. A stepwise multiple regression analysis was employed on the resultant item pool of 71 items.

Cross-validation was then performed as in the random selection method.

Factor Analysis

Analysis of MMPI

Principal component factor analysis (using varimax rotation) was applied to the three validity scales and the ten clinical scales of the MMPI together with the VPR score for the 175 subjects in the total pool formed by combining the primary MMPI sample and the cross-validation sample. The program used for the analysis was the Division of Educational Research Services (DERS) Fact20.

The three counsellors at Uncles at Large in January,

1980 were asked to provide descriptions of the qualities most desired in a volunteer. Factors identified in this analysis could then be conceptually related to the qualities listed. The qualities identified as desired in a volunteer can be seen in Appendix III.

Analysis of POI

Factor analysis employing varimax rotation was also applied to the scales of the POI and the VPR scores for the 181 subjects in the pool of subjects formed by combining the POI derivation sample and the cross-validation sample. The same program (DERS FACT20) was used for this analysis as was employed for the analysis of the MMPI.

The descriptions of desired volunteer qualities provided by the Uncles at Large Counsellors (Appendix III) were also available for comparison to factors identified in the principal component analysis of the POI.

IV. Results

A. Multiple Regression

Analysis of MMPI

The multiple regression analysis of the MMPI scales resulted in an equation containing 3 variables (scales), Lie (L), Repression (R), and Responsibility (Re). This equation produced a multiple correlation of .41 with the criterion (VPR) in the derivation sample. Table 1 shows the multiple correlations associated with equations employing 1 to 3 scales, the simple correlations, and the appropriate equation weights. Cross-validation resulted in a non-significant correlation between the predicted VPR and the actual VPR in the cross-validation sample. Actual and Predicted VPR scores for the 25 subjects in the cross-validation sample can be seen in Table 2.

The stepwise multiple regression applied to the items of the MMPI produced an equation containing 36 items as variables to predict the VPR. The multiple correlation with the VPR associated with this equation is .91 for the MMPI derivation sample. The multiple correlation for regression equations employing 1 to 36 MMPI items as well as simple correlation coefficients and regression weights appropriate for an equation with 36 items can be seen in Table 3. Regression weights for equations with 30, 20, 15, and 10 items are seen in Table 4. The predicted VPR scores for the 25 subjects in the cross-validation sample using equations

Table 1

Summary of Regression Equation using 3 MMPI Scales to Predict VPR

Scales	Multiple R	Simple r	B
L	.22	-.22	-0.074
R	.37	.21	0.045
Re	.41	.18	0.033
Constant			2.155

Table 2

Summary of Cross-validation Data for Regression Equations using 3 MMPI Scales to Predict VPR

Subject	VPR	Pred. VPR
S1	0	2.40
S2	3	2.34
S3	0	2.89
S4	2	2.70
S5	3	2.43
S6	3	1.25
S7	2	1.36
S8	3	3.18
S9	1	3.08
S10	3	1.60
S11	3	1.99
S12	4	2.49
S13	3	1.31
S14	3	1.83
S15	4	2.07
S16	0	2.50
S17	0	1.93
S18	0	2.67
S19	0	2.28
S20	2	2.01
S21	1	1.67
S22	0	2.21
S23	3	2.48
S24	4	1.78
S25	4	2.92
r=		-.19

Table 3

Summary of Regression Equation using 36 MMPI Items to Predict VPR

Items*	Multiple R	Simple r	B
404	.35	.35	.640
462	.42	-.25	-.583
223	.49	.33	.042
159	.53	-.21	-1.669
558	.58	.22	.073
3	.61	.15	.793
78	.63	.22	.258
319	.66	.25	1.021
532	.68	.17	1.522
474	.70	-.04	-0.641
39	.72	-.12	-0.367
52	.73	-.17	-1.154
455	.75	.26	.071
369	.76	-.20	-0.581
40	.77	.03	2.572
268	.79	.26	.572
109	.80	.16	1.023
111	.81	.17	.717
174	.82	.09	.444
8	.83	-.01	-0.910
133	.84	.11	.912
419	.85	.12	.879
261	.85	.19	.803
343	.86	.14	.490
522	.87	.03	.328
399	.87	.10	.499
433	.88	-.11	-1.041
345	.88	.15	-0.809
476	.89	-.07	-0.638
15	.89	-.08	-0.430
448	.89	.16	.784
229	.89	.21	.315
55	.90	.12	1.053
430	.90	-.02	.569
34	.90	-.07	-0.815
484	.91	.13	.378
Constant			-6.474

*A full listing of the 36 MMPI Items is found in Appendix IV

Table 4

Regression Weights for Equations of Various Lengths employing MMPI Items to Predict VPR

Items	Weights for Various Equation Lengths			
	30	20	15	10
404	.676	.667	.842	.877
462	-0.564	-0.457	-0.492	-0.938
223	.197	.413	.402	.563
159	-1.968	-1.937	-1.990	-2.285
558	.131	.451	.729	.938
3	.768	.664	.773	.719
78	.503	.463	.649	.649
319	1.130	.887	.929	.688
532	1.579	1.935	1.607	1.107
474	-0.754	-0.801	-0.827	-0.788
39	-0.479	-0.515	-0.740	
52	-1.549	-1.244	-1.133	
455	.174	.532	0.747	
369	-0.416	-0.718	-0.586	
40	2.312	1.769	1.048	
268	.641	.704		
109	.942	.730		
111	.706	.583		
174	.544	.692		
8	-0.753	-0.651		
133	.778			
419	.724			
261	.707			
343	.582			
522	.657			
399	.533			
433	-0.762			
345	-0.905			
476	-0.537			
15	-0.269			
Constant	-4.105	-2.986	-0.465	1.047

containing 36, 30, 20, 15, and 10 items are seen in Table 5. As can be seen in Table 5, cross-validation of the regression equations using MMPI items produced correlations between predicted and actual VPR scores ranging between -.15

Table 5

Summary of Cross-validation Data for Regression Equations using MMPI Items to Predict VPR

Subject	Actual VPR	Pred. VPR using various equation lengths				
		36	30	20	15	10
S1	0	7.36	2.19	5.32	3.57	1.99
S2	3	3.03	4.00	2.45	1.23	0.66
S3	0	5.23	6.78	4.20	3.51	2.01
S4	2	7.25	2.64	7.58	6.25	4.62
S5	3	1.90	1.66	3.04	2.42	3.28
S6	3	1.30	5.51	4.52	3.85	4.95
S7	2	3.72	7.90	7.82	6.11	4.94
S8	3	7.11	5.80	8.12	6.80	6.87
S9	1	4.33	4.62	7.21	6.04	5.99
S10	3	5.57	3.35	5.14	2.76	0.78
S11	3	3.11	4.17	3.85	2.39	1.20
S12	4	5.66	3.19	4.69	3.56	1.90
S13	3	4.19	5.82	4.27	2.74	2.33
S14	3	5.99	-1.29	6.73	4.92	2.09
S15	4	0.29	6.47	2.34	2.66	2.83
S16	0	6.17	6.87	8.60	6.56	4.80
S17	0	6.68	7.47	8.43	6.96	5.37
S18	0	6.33	8.82	9.43	7.36	5.93
S19	0	9.21	5.19	9.84	7.76	6.49
S20	2	6.52	3.60	4.48	2.42	-0.16
S21	1	4.10	-0.52	3.32	1.20	-1.32
S22	0	-0.63	3.61	2.18	0.70	-2.59
S23	3	4.62	4.76	3.58	2.34	1.24
S24	4	5.81	4.52	6.52	4.43	1.95
S25	4	4.68	2.19	6.41	4.10	2.51
R=		-.29	-.36	-.36	-.33	-.15

and -.36. None of these values is significant at the .05 level using a two-tailed t test.

Analysis of POI

Stepwise multiple regression applied to the twelve scales(raw scores) of the POI failed to produce an equation as none of the scales correlated significantly with the criterion (VPR) in the derivation sample. Cross-validation

Table 6

Summary of Regression Equation using 27 POI Items (Random pre-selected method) to predict VPR

Items*	Multiple R	Simple r	B
65	.21	.21	.577
54	.28	.18	1.327
101	.34	.16	1.979
45	.37	-.15	-0.539
104	.41	-.15	-0.328
58	.44	.16	.816
40	.47	-.10	-0.852
12	.49	-.09	-0.990
22	.51	-.06	-0.230
38	.53	.12	.665
81	.55	-.12	-0.809
43	.57	-.04	-1.341
96	.59	.19	.479
145	.61	.07	.081
51	.62	.17	.552
19	.63	.09	.616
106	.64	.14	.554
3	.65	-.05	-0.496
64	.66	.14	.455
114	.67	-.15	-0.511
136	.68	.16	.750
36	.69	-.03	-0.583
47	.70	-.07	-0.385
72	.71	-.14	-0.459
59	.71	.08	.438
62	.72	.05	.353
76	.72	-.11	-0.354
Constant			-1.74

*A full listing of these 27 POI Items is found in Appendix V

was not applicable as a result of the lack of significant findings in this analysis. The stepwise multiple regression applied to the POI items derived by the random pre-selection method generated an equation with 27 items. The multiple correlation associated with this equation when applied to the derivation sample is .72. Table 6 contains summary data of the equation containing 27 POI items derived by means of

Table 7

Regression weights for Equations of Various Lengths using POI Items (random pre-selection method) to Predict VPR

Items	Weights for Different Equation Lengths		
	20	16	10
65	.471	.435	.598
54	1.447	1.580	1.587
101	1.948	1.942	1.635
45	-0.600	-0.688	-0.751
104	-0.518	-0.606	-0.557
58	.694	.894	.738
40	-0.827	-0.766	-0.738
12	-1.020	-1.000	-0.737
22	-0.573	-0.553	-0.521
38	.611	.726	.676
81	-0.763	-0.767	
43	-1.335	-1.419	
96	.556	.554	
145	.135	.360	
51	.520	.370	
19	.697	.546	
106	.558		
3	-0.397		
64	.459		
114	-0.528		
Constant	-1.047	-1.071	-1.261

the random pre-selection method. The appropriate regression weights for equations containing 20, 16, and 10 POI items (Random method) can be found in Table 7.

Cross-validating these equations in a manner identical to that employed in cross-validating the MMPI equations resulted in non-significant correlations ranging from -.14 to -.27. Predicted VPR scores and correlations appropriate to equations of each length can be seen in Table 8.

Applying the stepwise regression to the POI items selected on the basis of correlations, produced a regression

Table 8

Summary of Cross-Validation of Regression Equations using 24 POI Items (Random pre-selection) to predict VPR

Subject	Actual VPR	Pred. VPR using various equation lengths			
		24	20	16	10
S1	0	2.53	2.26	2.19	2.40
S2	3	2.87	2.86	2.63	2.40
S3	0	3.44	3.87	4.09	3.52
S4	2	0.89	1.62	1.97	2.40
S5	3	2.10	1.95	1.51	2.33
S6	3	2.03	2.02	2.19	2.33
S7	2	3.89	3.57	3.37	3.38
S8	3	3.28	3.17	3.45	3.71
S9	1	2.73	2.83	3.21	3.14
S10	3	1.18	1.60	1.93	2.33
S11	3	5.68	5.01	4.42	3.85
S12	4	0.42	0.24	0.31	2.29
S13	3	2.96	2.83	2.63	2.33
S14	3	3.48	3.65	3.78	3.68
S15	4	-0.11	0.47	0.73	1.23
S16	0	3.61	3.60	3.78	3.38
S17	0	1.23	1.11	1.27	2.40
S18	0	2.11	1.92	2.11	2.29
S19	0	2.39	2.97	2.82	2.97
S20	2	7.03	6.12	5.70	4.85
S21	1	2.20	3.03	3.04	2.40
S22	0	2.48	3.00	3.17	2.81
S23	3	1.49	1.66	1.67	1.98
S24	4	3.28	2.97	2.82	2.97
S25	4	1.43	1.75	2.00	1.75
R=		-.14	-.22	-.27	-.22

equation employing 24 items. The resultant multiple correlation is .68. Summary data for the regression equation of 24 POI items preselected on the basis of correlation is contained in Table 9. Appropriate regression weights for equations containing 20, 16, and 10 items are found in Table 10.

Cross-validation of the four illustrative equations of correlation-preselected items produced predicted VPR's which

Table 9

Summary of Regression Equation using 24 POI Items (Correlation pre-selected method) to Predict VPR

Items*	Multiple R	Simple r	B
65	.22	.22	.565
54	.32	.22	1.672
101	.38	.16	3.339
58	.42	.19	1.048
71	.45	.22	1.826
61	.47	-.04	-0.609
1	.49	-.05	-0.752
38	.50	.13	.428
59	.51	.12	.764
105	.53	.00	-1.393
30	.55	-.05	.962
85	.57	-.01	-0.882
74	.58	-.10	-1.135
149	.59	-.14	-0.983
17	.61	.18	.454
76	.62	-.07	-0.410
81	.63	-.03	-0.382
117	.63	-.07	-0.569
20	.64	.06	-0.707
24	.65	-.04	.411
25	.66	-.04	.619
57	.66	-.09	-0.578
133	.67	-.08	-0.427
139	.68	.09	.279
Constant			-3.449

*A listing of these 24 POI Items is found in Appendix VI

correlated between -.11 and -.22 with actual VPR scores, all non-significant. The list of predicted VPR scores for each of the four equation lengths can be seen in Table 11.

B. Factor Analysis

Analysis of MMPI

Principal component analysis, using varimax rotation, of the MMPI scales with the VPR yielded four factors which

Table 10

Regression Weights for Equations of Various Length using POI Items (Correlation Pre-selcted) to Predict VPR

Items	Weights for Different Equation Lengths		
	20	16	10
65	.653	.631	.643
54	1.558	1.705	1.582
101	2.818	2.462	1.877
58	1.103	.815	.844
71	1.757	1.304	.993
61	-0.600	-0.541	-0.415
1	-0.712	-0.638	-0.574
38	.532	.514	.707
59	.748	.714	.676
105	-1.286	-1.289	-0.741
30	.859	.704	
85	-0.937	-0.834	
74	-1.122	-1.093	
149	-0.786	-0.659	
17	.443	.441	
76	-0.331	-0.410	
81	-0.429		
117	-0.461		
20	-0.536		
24	.298		
Constant	-2.997	-3.800	-6.204

accounted for 62 per cent of the total variance. The factors have been termed, respectively, Abasement, Depression, Passive-aggression, and Sensitivity. The first three factors are independent of the VPR, comprised only of MMPI data. Factor 1, Abasement, might also be termed General Maladjustment. It corresponds closely with a factor widely identified in the literature of factor studies of the MMPI (Eichman, 1961, 1962; Welsh, 1952). This factor seems to be related to the test-taker's willingness to say socially undesirable things about himself. Loading most positively

Table 11

Summary of Cross-Validation of Regression Equations using POI Items (Correlation Pre-selection) to Predict VPR

Subject	Actual VPR	Pred. VPR using various equation lengths			
		24	20	16	10
S1	0	2.53	2.30	2.03	2.97
S2	3	2.87	2.90	0.94	2.97
S3	0	3.44	3.92	2.66	2.97
S4	2	0.89	1.66	0.11	2.97
S5	3	2.10	2.00	3.41	2.32
S6	3	2.03	2.06	2.04	2.32
S7	2	3.89	3.62	3.21	2.32
S8	3	3.28	3.18	1.84	2.97
S9	1	2.73	2.84	0.23	3.38
S10	3	1.18	1.64	0.24	2.74
S11	3	5.68	5.05	2.73	3.85
S12	4	0.42	0.28	2.66	3.38
S13	3	2.96	2.87	0.94	2.97
S14	3	3.48	3.69	2.09	2.97
S15	4	-0.11	0.52	0.82	1.80
S16	0	3.61	3.65	3.87	2.97
S17	0	1.23	1.16	-0.60	2.74
S18	0	2.11	1.96	2.67	2.97
S19	0	2.39	3.01	2.67	2.97
S20	2	.03	6.16	5.79	4.84
S21	1	2.20	3.07	1.60	2.97
S22	0	2.48	3.05	1.48	2.97
S23	3	1.49	1.70	0.22	2.38
S24	4	3.29	3.01	2.67	2.97
S25	4	1.43	1.79	0.31	2.32
R=		-.16	-.22	-.11	-.19

on this factor are the MMPI scales associated with pathology, notably Schizophrenia (Sc), Psychasthenia (Pt), F, Hypomania (Ma), and Hypochondriasis (Hs). Factors which load negatively are primarily the denial scales such as L, and K.

Factor 2 has, as strong components, the MMPI scales reflecting depression and lethargy, Depression (D), Social

Introversion (Si), and Hypochondriasis (Hs). The only significant negative loading is Ma. While the composition of this factor does not appear to have precedent in the literature of factor studies of the MMPI, an examination of the scales loading on the factor suggest the label of Depression.

The third factor is composed of three scales, Hysteria (Hy), and Masculinity-femininity (Mf) and Pd. While not widely identified by other studies as a factor of the MMPI, clinical reports have suggested that the hostility indicated by an elevated Pd is modified or controlled by elevations on Mf or Hy. This suggests either a passive-aggressive personality (Dahlstom, *et al.*, 1972) or a controlled individual whose underlying aggression occasionally breaks out into anti-social behavior (Caldwell, 1972; Davis, 1971; Davis and Sines, 1971; Persons and Marks, 1971).

The final factor is the only one on which the VPR loads significantly. Loading negatively on this factor is the L scale of the MMPI, suggesting the factor is related to both an absence of the rigidity which often characterizes high L scores, as well as a presence of openness suggested by the low L score. Other MMPI scales with loadings, both positive, on the fourth factor are Mf and Paranoia (Pa). Moderate elevations on Mf are seen as related to such interpersonal skills as empathy, gentleness, and openess (Gough, McKee, and Yandell, 1955; Hathaway and Meehl, 1951). Slight elevations on Pa are considered to reveal interpersonal

awareness and sociability (Carkhuff, *et al.*, 1965; Cottle, 1953). Sensitivity appears appropriate as a tentative label. The summary of the factor analysis applied to the MMPI can be seen in Table 12.

The loading of the VPR on Factor 4 is consistent with the second hypothesis of this study which predicted a loading of the criterion on factors associated with growth processes. In light of the absence of any VPR loading on the first 3 factors, however, the first hypothesis, that the VPR would load negatively on factors related to pathology, is not supported.

Analysis of POI

Principal component analysis applied to the 12 scales of the POI and the VPR resulted in three factors being identified which account for 61.5% of the variance. Of the three factors identified, the first two are each composed of 8 scales or sub-scales of the POI. The differences in the traits which the POI scales and sub-scales are intended to measure are very subtle and difficulties in interpretation of factors are expected. The overlap encountered in the analysis, with 4 scales or sub-scales in common for the first two factors, renders interpretation impossible.

The VPR loads very heavily on the third factor on which Time Competence (TC) loads relatively weakly. This weak joint loading of the VPR and TC, together with the finding that the VPR did not load significantly on factors 1 and 2, offers no support for the research hypotheses concerning the

Table 12

MMPI Factor Analysis Summary - Factor Loadings
Greater than | .30 |

Scales	Factor 1 Abasement	Factor 2 Depression	Factor 3 pass.-aggr.	Factor 4 Sensitivity
Sc	.87			
Pt	.84			
F	.61			
Ma	.55			
Hs	.49			
Pd	.34			
Mf	.32			
Hy	-.33			
L	-.51			
K	-.61			
D		.79		
Si		.74		
Hs		.44		
Ma		-.63		
Hy			.77	
Pd			.62	
Mf			.45	
VPR				.76
Mf				.38
Pa				.32
L				-.51
% total var	25.9	14.1	13.0	9.0

POI scales. A listing of the loadings on the three factors can be seen in Table 13.

Table 13

POI Factor Analysis Summary - Factor Loadings
Greater than | .30 |

Scales	Factor 1	Factor 2	Factor 3
I	.85		
SAV	.81		
C	.78		
Ex	.77		
Fr	.67		
S	.64		
A	.64		
TC	.60		
Sa		.86	
Nc		.71	
Sy		.65	
Sr		.52	
I		.47	
S		.37	
Fr		.34	
A		.32	
VPR			.83
TC			.41
% total var	33.3	19.7	8.6

V. Discussion

A. Multiple Regression Analysis

As is pointed out in the literature review, the success of predictive studies in the volunteer sector has been limited. It was hoped that in this study, employing a larger sample than in any predictive study encountered in the literature pertaining to volunteers, the use of multiple regression, particularly at the scale level, would achieve success. That unfortunately was not the case.

The most notable findings of the five multiple regression analyses performed are the failures to generate regression equations which predict the criterion (VPR) when applied to the independent cross-validation sample. A number of issues need to be examined with regard to the failures in cross-validation. Not only did cross-validation fail to produce the desired significant positive correlations, it resulted in an array of negative correlations. While all such negative correlations were found to be non-significant using a two tailed t test, the number of such negative correlations is a cause for concern and is worthy of discussion. It should be pointed out that although the total number of correlations reported is 14, these are not independent of one another. For instance, in the analysis of items of the MMPI, five equations of various lengths were cross-validated. These equations cannot be considered to be independent since they have highly similar

item content. The equations are identical except for the progressive abreviation. Hence, the occurrence of one negative correlation increases the probability that other equations in the set will also be negative. In the case of the POI analysis, not only does this hold true within the two sets of equations generated by each method (random *vs* correlation pre-selected), it also holds true accross the two sets of equations. This is true because the two sets have five of their first ten items in common. Nevertheless, while the number of fully independent correlation coefficients reduces from 14 to 3, the consistency and the magnitude of the discrepancy between results in the derivation and cross-validation samples is striking. Some methodological issues which may account for these unexpected results need to be examined.

Methodological Considerations

The first aspect of the multiple regression analysis to be examined is the size of the derivation samples. Kerlinger and Pedhazer (1973) state "Any multiple regression analysis and especially those with many independent variables, should have at least 100 subjects, preferably 200 or more." (p. 446) The analysis of the scales on both the MMPI and the POI satisfy this criterion for sample size, albeit minimally, particularly since the number of predictors is not great; the numbers of subjects are respectively six and thirteen times the numbers of scales entered into the analyses. While still larger sample sizes would be desirable,

the issue is one of statistical power, not procedural validity.

McNeil, Kelly, and McNeil (1975) address this issue directly. After some discussion of the relationship of sample size with the F test of significance and with the value of R, they go on to say:

> On the other hand, you must never let a small sample size eliminate an analysis. You must realize that small sample sizes reduce statistical power--the probability of finding significance if the research hypothesis is true in the population....
>
> All findings require replication, and unexpected findings on small samples simply indicate less chance of being replicated. The proof is always in the prediction, and whether or not a finding from a small sample has merit rests in empirical replication. (pp. 351-352)

According to McNeil, Kelly, and McNeil, then, the use a small sample size is not, in itself, unsound. The small sample does, however, make replication (cross-validation) more unlikely. The advantages of a larger sample sample size are essentially twofold. First, the resultant R value is a more accurate estimate of the population value. This results in a greater likelihood that the derived regression equation will cross-validate. The second effect of a larger sample size is to increase the level of significance of obtained correlations. This may result in the inclusion of items in a regression equation which would be rejected in a sample of smaller size because, although the magnitude of the correlation is the same, the F value of the variable's contribution to the equation varies with the sample size.

The derivation sample size in the analysis of scales is not that small relative to the number of variables. It therefore does not seem valid to attribute the magnitude of error observed to the effects of sample size. McNeil, Kelly, and McNeil (1975) state that generally the magnitude of correlations are not greatly affected by sample size once a sample of 100 or so is reached. The effects of increasing sample size further can, in effect, be considered subtle. Failure to produce replicable regression equations using scales is not likely the result of sample size.

The situation in the case of the analyses of items on both the MMPI and POI is quite different from that of the analyses of scales. In analysing items, methods were used to circumvent the fact that the F test of significance of variables in the equation cannot be performed unless the number of subjects exceeds the number of predictor variables. The number of items on the MMPI greatly exceeds the number of subjects, and in the case of the POI the number of items exceeds the number of subjects who could be included in one complete analysis due to those who would be rejected because of missing data. If we apply the principle stated by McNeil, Kelly, an McNeil (1975) to the measures employed in analysing the items on the two inventories, it will again be seen that the issue is one of power rather than of methodological validity. Since replication was built into the experimental design of this study, there was no danger of drawing unwarranted conclusions based on data from a small

sample.

A second consideration with regard to sampling is the size and nature of the cross-validation sample. Just as a larger derivation sample increases the representativeness of that sample, so a larger cross-validation sample approximates the population more accurately. If the cross-validation sample is not representative of the population, correlations between the actual VPR and the predicted VPR for subjects in that sample using the derived multiple regression equation may not reflect the "true" validity of the equation.

Of greater concern than the size *per se* is the representativeness of the cross-validation sample. One indicator of representativeness that can be examined is the distribution of criterion scores in the cross-validation sample in comparison with the two derivation samples. Table 14 shows the absolute and relative frequencies of the different ratings in each of the three samples.

Chi square was performed as an analysis of goodness of fit resulting in a value of 3.569 in testing the cross-validation sample with the MMPI derivation sample. The Chi square for the test against the POI sample was 3.561. The indicated probability that the cross-validation sample was drawn from the same population as each of the derivation samples is between 30 and 50 per cent. This probability level is disappointing. While the level of confidence is sufficient that we cannot conclude that the cross-validation

Table 14

Distribution of VPR scores in the Cross-validation and Derivation samples

Rating	MMPI Derivation Sample		POI Derivation Sample		Cross-validation Sample	
	Frequency	%	Frequency	%	Frequency	%
0	35	23.3	24	15.3	7	28
1	11	7.3	12	7.7	2	8
2	20	13.2	21	13.5	3	12
3	35	23.3	53	34.0	9	36
4	49	32.7	46	29.5	4	16
Total	150	100	156	100	25	100

sample is not representative, it must be recognized that the probability level of falsely concluding the cross-validation sample to be representative approaches 70 per cent. Conclusions based on the applications of derived equations on this cross-validation sample must be suspect. While the size of the cross-validation sample need not be as large as the derivation sample since the number of variables being manipulated is smaller, the use of a cross-validation sample of 25 may not offer the rigour desired in a replication.

Another major procedural issue which must be examined is the nature of the criterion, the VPR. While the counsellors performing the ratings were instructed to evaluate the volunteer independently of the state of the match, it is probable that some contamination of the VPR ocurred. For example, if a volunteer is matched with an outgoing, active

intelligent boy, the rewards he receives from the interaction make it more likely that he will establish and maintain a consistent, enjoyable relationship. Furthermore, the volunteer may demonstrate a high level of communication with his nephew as much because of the boy's communication skill than because of his own.

Similarly, a volunteer matched with a boy whose interpersonal skills are low, whether because he is withdrawn, acting out, intellectually dull, or disinterested, may find it more difficult to sustain his own level of motivation so as to perform at a level deemed satisfactory by his counsellor. The VPR may be, in part, a measure of the skill level of the 'nephew' as well as that of the 'uncle'. This contamination of the VPR is likely to be heightened by the tendency on the part of counsellors in the Uncles at Large program to attempt to assign a volunteer to a boy on the basis the probability of success of the relationship. Hence, a boy who is perceived to be a challenge would be assigned to a volunteer whose skill level is perceived to be high. While this strategy may increase the possibility of the boy being in a "successful" match, the effect on the volunteer is quite the opposite. His chances of being in a relationship which can be described as positive are likely to be considerably reduced. Because it is the highly skilled uncle, the one showing "desired characteristics", who is assigned to challenging matches, the VPR may, to some extent, be biased against the very volunteers who are seen

as the most capable.

A wide variety of other factors also intervene which may affect the rating a volunteer receives on the VPR. Such things as geographic distance between uncle and boy, the personality of the boy's mother, the marital status of an uncle, his job situation, interactional factors, such as differing interests, likes or dislikes, socio-economic statuses, and a host of other variables inevitably affect the general condition of the match, and hence the rating given by the counsellor.

This error component in the criterion is not limited to the VPR, but is inevitable in any criterion of performance or success in the Uncles at Large program, whether subjective or objective.

While it may be that the failure of replication in the present study resulted from such methodological considerations as a cross-validation sample which is not representative of volunteers in the program, it must be assumed that the test data bear no relationship to performance in the Uncles at Large Program. If such is the case, the failure has two consequences.

The test data appear unable to improve on pre-existing clinical methods for making screening out decisions. Further, the study has provided no assistance in the identification of volunteers of differing potential, such that they can be selectively placed in assignments according to prognosis.

These conclusions are particularly disappointing and perplexing in light of the power attributed to the statistical method by Meehl (1954) and numerous other researchers cited in the review of the literature of the clinical *vs.* statistical debate presented in chapter 3. Nevertheless, it is in keeping with the inconclusive, largely negative array of results found by other researchers in the volunteer sector.

Evans (1976) found discriminant function analysis effective with MMPI scales and items in predicting volunteer performance, but his study was not replicated. The discrepancy in the present study between results obtained in the derivation sample and the cross-validation sample indicates the importance of such replication. Although this study did not directly test Evans' methodology, caution is indicated in drawing conclusions from his findings until such replication is conducted.

The findings of Mischel (1965) and the modest replications by Dicken (1969) and Guthrie and Zektick (1967) that the Es scale of the MMPI relates to volunteer performance in the Peace Corps are not born out in the Uncles at Large Program. This suggests limited generalizability of the findings of the cited studies. It may be that the single element in common--volunteerism--is insufficient to expect similar relationships to exist in the two settings. As Engs and Kirk (1974) and Russem (1976) have indicated, volunteers in even very similar settings can differ substantially in

appraised personality. Since Uncles at Large and the Peace Corps may employ different populations of volunteers and require of them different roles, it is not suprising that the same statistical relationships do not hold.

The emphases placed by Ansel (1972) on ongoing performance monitoring, and by Fenichel (1978) on the provision of training appear particularly to have merit.

B. Factor Analysis

It was hypothesized that factor analysis of the scales of the MMPI and POI together with the VPR would reveal the importance of a nurturant personality to the performance of a volunteer in the Uncles at Large Program. Demonstration of these qualities by fathers was found in many studies described in the Literature Review to be related to the healthy development of boys.

As pointed out in chapter 2, a number of studies (*eg.* Biller, 1969; Mussen and Distler, 1959; Sears, 1953) have identified paternal nurturance as related to healthy sex role development. Similarly, paternal nurturance appears associated with the development of intellectual and cognitive competence (Busse, 1969; Heilbrum, 1971; Radin, 1972, 1973; Seder, 1956), and with school achievement (*eg.* Andersland, 1968; Teahan, 1963). In addition, counselling literature (*eg.* Carkhuff, 1969; Rogers, 1951, 1955; Truax and Carkhuff, 1967) has stressed the importance of the similar qualities of empathy, warmth and genuineness as

facilitative dimensions or "pre-helping" skills in therapy.

An examination of appendix III indicates that the counsellors in the Uncles at Large program stress similar characteristics. It was hypothesized that volunteers showing the capacity to be nurturant would have the most positive impact on the children they were matched with. The relationships formed would be richer, and consequently, such individuals would be rated more highly by their supervising counsellor. Factor analysis offered the potential to identify a relationship between the nurturant personality and volunteer performance. A successful demonstration, using factor analysis, of the relatedness of these qualities to volunteer performance would have at once extended a theory of development into new territory and more precisely defined the function of the volunteer in Uncles at Large.

While it would not have provided a pragmatic tool for the use in the volunteer selection process at Uncles at Large, it would have supported the counsellors in their stressing of these qualities in selection and training. The relationships found provide little encouragement.

Analysis of MMPI

The principal components revealed in the factor analysis of the MMPI scales in combination with the VPR offers only limited support for the hypotheses formed by examining the personal qualities valued in an applicant by the counsellors in the Uncles at Large program (see Appendix III). The hypothesis that the VPR would load negatively on factors

of psychopathology does not hold in the present study. The VPR does not load significantly on the first 3 factors, on which negative loadings were hypothesised.

The loadings on Factor 4 can, however, be interpreted as providing some support for the value placed on the qualities of empathy, genuiness, warmth, flexibilty, *etc.* by the counsellors in the Uncles at Large Program. The VPR does load on a factor for which the label "Sensitivity" seems appropriate.

The nature of the VPR, however, suggests a note of caution. The criterion in this study was a rating by counsellors who could not be kept double blind as to the purpose of the study. It is possible therefore that VPR scores were assigned, in part, on their prior knowledge of the volunteers' personalities and style of interpersonal functioning independent of his actual performance level in the program. This knowledge could have been partially based on the previously observed MMPI test scores. A self fulfulling prophesy may have been set up. The common loadings should, therefore, not be interpreted as indicating a simple causal relationship between the personality variable "Sensitivity" and performance in Uncles at Large. The relationship is correlational in nature and as such "sensitivity" can be described as being associated with higher scores on the VPR.

Analysis of POI

The results of the factor analysis applied to the POI scales appears to offer little in the way of conceptual

elucidation. The observed common clustering is best interpreted as a chance occurrence rather than attempting a theoretical formulation on the basis of this single common loading with the VPR.

A characteristic of the POI which may account for the ambiguous results obtained in the factor analysis of the the POI is item overlap on the scales. The two primary scales, TC and Inner-directed (I), account for every item on the inventory. The remaining 10 sub-scales are comprised of items already on one of these two scales. This fact, reflecting the author's belief that "The concepts measured by the POI were not conceived as being independent or orthoginal" (Knapp, 1976, p. 86.), may indicate that the internal properties of the inventory are not properly revealed by factor analysis. The findings, obtained through factor analysis, that the VPR is largely independent of the POI scales and subscales is nevertheless, noteworthy.

C. Implications

The failure to generate regression equations which cross-validate and the fact that factor analysis findings are weak do have implications for Uncles at Large and similar programs. First, while conclusions must be tempered with the realization that the cross-validation sample may not be representative of volunteers in the program, this study provides no support for the inclusion of the POI in the screening procedures of the agency. Neither items nor

scales were found to bear any relationship to the level of performance of the volunteers in the program, as measured by the VPR.

The use of the MMPI presents a more complex matter for interpretation. While the findings of this study do not support that use of the MMPI in addition to the present screening procedures the current methods include the use of that inventory. No statements can be made, based on this study, concerning the validity of the use of the MMPI in this *a priori* way. This requires further elaboration.

The statistical effect of using the MMPI to screen out some applicants from the program on the basis of elevated scale scores, thereby eliminating them from this study, is to reduce the variance of the scores on the test entered into analysis. Given that this partialling out has taken place, the MMPI was unable to predict VPR scores. However, it is not possible to determine what results might have been obtained if the MMPI had not been used as part of the pre-selection process. Since no performance appraisal is available for those screened out by the MMPI, it cannot be stated whether the strategy to employ the MMPI is correct or not. Parenthetically, the same can be said about any or all of the screening procedures used. At present, the value of the screening procedures will have to be evaluated in terms of the clinical judgements of professional staff.

If the agency wishes to evaluate current screening procedures the appropriate methodology would be to select, on a

random basis, one group of applicants who would be screened as usual, and one or more groups who would be screened with any or all of the components of the present screening procedures removed. After observing and rating the performance of the groups in the program, comparisons could be made to determine if there is a difference in performance level.

The methodology of such a study would not be complex: sample size need not be large since the number of variables entered in the analysis could be small. The difficulty in such a study is the nature of the criterion. As in this study, the number of intervening variables which distort the performance rating may prove too much of an obstacle to overcome.

The question arises as to whether the time and expense required to apply the empirical method to a setting like Uncles at Large is productive. While no significant results were found in this study, it cannot be stated that a relationship does not exist between current or possible intake data and performance in the program. It is suggested, however, that the process of discovering such relationships may involve a long and troubled trial and error testing of countless predictors against many criteria.

Preferable to this would be to make available resources to increase the contact counsellors have with the participants, volunteers and recipients of the service. Increased stress on the training of volunteers, may be preferable to more emphasis on screening. Maintaining a staff - volunteer

ratio small enough to allow for consistent, frequent follow-up and trouble-shooting of caseload should be particularly stressed. Consideration might be given to such procedural changes as making training seminars compulsory, scheduling group activities which enable counsellors to observe volunteers *in situ*., and conducting home visits of families at the time of admittance to the program. These or other innovations may increase the capacity of counsellors to enrich the matches in their care. Such changes would likely have consequences for the staffing of the agency. A low counsellor - volunteer ratio would be required to derive maximum benefit from any such improvements. The Uncles at Large Society should examine policy regarding staffing and determine if resources are available to reduce caseloads by increasing the size of professional staff. Since the empirical method does not appear to be a practical or effective contribution, the alternative strategy of innovation and improvement in clinical procedures may well be the best way to fulfil the responsibility the agency has to the children in its care.

D. Suggestions for further research

While the current study has identified a number of difficulties in conducting research in volunteer programs, there are some studies which might effectively and unobtrusively be carried out. First, to investigate whether the failure in this study was due to an unrepresentative

cross-validation sample, the derived equations should be applied to another, preferably larger sample of volunteers. To most closely approximate the conditions of this study, such research should be conducted in a one-to-one program using the same performance criterion.

A second research project recommended is to evaluate the clinical judgements of the counsellors. The methodology of such a study would not be complex, and could become part of the routine procedures of the agency. After each applicant has passed through all agency screening procedures, the supervising counsellor would be required to rate the applicants who are admitted to the program on a numerical scale. The ratings should then be filed separately from the applicant's active file, so as to minimize the self-fulfilling prophesy effect. At the time of routine follow-ups the volunteer's performance can be rated, either in general terms or on specific criteria. Such a study would permit examination of both the overall accuracy of screening procedures as well as the differential skill of the counsellors in applying clinical screening methods. This was identified as a matter of concern in Mehl's (1954) writings.

Another area in which research can be conducted is the overall effect of the program. While the overall intention of Uncles at Large may be preventative, there are usually, in specific matches, implicit or explicit objectives which the counsellor hopes can be attained. These objectives

should be made explicit wherever possible, and operationally defined. A case by case examination can then determine if the program has an impact on the boys it has elected to serve.

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VII. Appendix I

The Volunteer Performance Rating Scale

The Volunteer Performance Rating Scale

The following descriptions are to serve as illustrations of the volunteer's behaviors associated with the various supervisor ratings. Because of the scope of behaviors and situations involved, the descriptions are not intended to be exhaustive or definitive. The rater should particularly note that it is the uncle's performance that is being measured, not the general condition of the match.

Rating	Description
0	The uncle's behavior is deemed to be damaging to the child such that an immediate termination of the match is required. The uncle's performance may be characterized by such things as broken promises, failure to appear for arranged meetings with no notice or acceptable excuse, ridiculing his 'nephew'. A general lack of awareness of the impact of his actions may be as may be a repeated failure to alter his behavior in spite of his stated intentions to do so.
1	A rating of "1" is appropriate when the uncle demonstrates some effort, albeit weak, or inconsistent (and unsuccessful) to maintain the relationship and overcome problems encountered. The uncle may show remorse for his low performance level, but may also cover with excuses. The uncle "goes through the motions" by maintaining reasonably consistent contact with his nephew, but has failed to develop more than a superficial relationship. The impact on the boy is seen as either negative or neutral. Generally, a match in which the uncle is given a rating of "1" is in need of termination if efforts to improve are unsuccessful.

2

The uncle maintains fairly consistent contact and develops an enjoyable relationship. Entertainment may predominate over relationship building activities, such that the two people have little opportunity to come to know one another at a deeper level. In spite of the superficiality, uncle, nephew and/or mother have some good things to say about the relationship. The relationship may not have much capacity to survive interpersonal stress, but is worth maintaining, although efforts should still be made at enhancement.
The rating of "2" is also appropriate if in a very difficult match, an uncle devotes a resonably good effort at building and maintaining the match, even if such efforts are unsuccessful.

3

A rating of "3" represents a good, or above average level of fuctioning on the uncle's part, successful or not. His performance demonstrates sensitivity, commitment, and consistency. The uncle's effort and contribution is likely to be seen by nephew and/or mother, and they are likely to praise him. Usually the relationship is a personal one and has a good capacity to withstand stressful situations.
This rating is also appropriate when an uncle's efforts, although unsuccessful are above average.

4

This rating is reserved for the uncle whose performance can be called outstanding. The effort he exerts in developing and maintaining the relationship is exceptional. Descriptions by the boy's mother will often reflect her appreciation. "He's like one of the family" or "I couldn't have chosen a better match myself." A rating of "4" is also called for when, in a difficult match, an uncle's efforts are far above those expected, independent of the quality of the resultant relationship.

VIII. Appendix II

VPR Inter-rater Reliability Data

INTER-RATER RELIABILITY CALCULATION #1

NAMES	COUNSELLOR #1		COUNSELLOR #2		
	x	x^2	y	y^2	xy
S_{1i}	3	9	3	9	9
S_{1ii}	2	4	2	4	4
S_{1iii}	3	9	3	9	9
S_{1iv}	3	9	3	9	9
S_{1v}	3	9	3	9	9
S_{1vi}	3	9	3	9	9
S_{1vii}	3	9	3	9	9
S_{1viii}	3	9	4	16	12
S_{1ix}	4	16	4	16	16
S_{1x}	3	9	3	9	9
TOTAL	30	92	31	99	95
$(\Sigma x)^2$	900		$(\Sigma y)^2$	961	$\Sigma x \Sigma y$ 930

$$r = \frac{N\Sigma xy - \Sigma x \Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2][N\Sigma y^2 - (\Sigma y)^2}}$$

$$r = \frac{950 - 930}{\sqrt{(920-900)(990-961)}}$$

$r = .83$

INTER-RATER RELIABILITY CALCULATION # 2

NAMES	COUNSELLOR #1		COUNSELLOR #3		
	x	x^2	y	y^2	xy
S_{2i}	4	16	4	16	16
S_{2ii}	3	9	3	9	9
S_{2iii}	4	16	4	16	16
S_{2iv}	3	9	3	9	9
S_{2v}	4	16	4	16	16
S_{2vi}	3	9	4	16	12
S_{2vii}	2	4	1	1	2
S_{2viii}	3	9	3	9	9
S_{2ix}	2	4	3	9	6
S_{2x}	1	1	1	1	1
TOTAL	29	93	30	102	96
$(\Sigma x)^2$	841		$(\Sigma y)^2$ 900		$\Sigma x \Sigma y$ 870

$$r = \frac{N\Sigma xy - \Sigma x \Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2][N\Sigma y^2 - (\Sigma y)^2}}$$

$$r = \frac{960 - 870}{\sqrt{(930-841)(1020-900)}}$$

$$r = .87$$

INTER-RATER RELIABILITY CALCULATION #3

NAMES	COUNSELLOR #2		COUNSELLOR #3		
	x	x^2	y	y^2	xy
S_{3i}	4	16	4	16	16
S_{3ii}	4	16	3	9	12
S_{3iii}	3	9	4	16	12
S_{3iv}	3	9	3	9	9
S_{3v}	3	9	3	9	9
S_{3vi}	4	16	4	16	16
S_{3vii}	3	9	3	9	9
S_{3viii}	4	16	4	16	16
S_{3ix}	4	16	4	16	16
S_{3x}	2	4	3	9	6
TOTAL	34	120	35	125	121
$(\Sigma x)^2$	1156		$(\Sigma y)^2$	1225	$\Sigma x \Sigma y$ 1190

$$r = \frac{N\Sigma xy - \Sigma x \Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2][N\Sigma y^2 - (\Sigma y)^2}}$$

$$r = \frac{1210 - 1190}{\sqrt{(1200-1156)(1250-1225)}}$$

$$r = .60$$

INTER-RATER RELIABILITY CALCULATION #4

NAMES	COUNSELLOR #4		COUNSELLOR #5		
	x	x^2	y	y^2	xy
S_{4i}	3	9	3	9	9
S_{4ii}	2	4	2	4	4
S_{4iii}	4	16	3	9	12
S_{4iv}	4	16	4	16	16
S_{4v}	3	9	3	9	9
S_{4vi}	3	9	3	9	9
S_{4vii}	3	9	3	9	9
S_{4viii}	2	4	3	9	6
S_{4ix}	4	16	4	16	16
S_{4x}	3	9	3	9	9
TOTAL	31	101	31	99	99
$(\Sigma x)^2$	961		$(\Sigma y)^2$ 961		$\Sigma x \Sigma y$ 961

$$r = \frac{N\Sigma xy - \Sigma x \Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2][N\Sigma y^2 - (\Sigma y)^2}}$$

$$r = \frac{990 - 961}{\sqrt{(1010-961)(990-961)}}$$

$r = .77$

INTER-RATER RELIABILITY CALCULATION # 5

NAMES	COUNSELLOR #4		COUNSELLOR #6		
	x	x^2	y	y^2	xy
S_{5i}	2	4	1	1	2
S_{5ii}	4	16	4	16	16
S_{5iii}	3	9	3	9	9
S_{5iv}	3	9	3	9	9
S_{5v}	2	4	3	9	6
S_{5vi}	4	16	4	16	16
S_{5vii}	4	16	4	16	16
S_{5viii}	3	9	3	9	9
S_{5ix}	2	4	2	4	4
S_{5x}	3	9	3	9	9
TOTAL	30	96	30	98	96
$(\Sigma x)^2$	900	$(\Sigma y)^2$	900	$\Sigma x \Sigma y$	900

$$r = \frac{N\Sigma xy - \Sigma x \Sigma y}{\sqrt{N\Sigma x^2 - (\Sigma x)^2 \; N\Sigma y^2 - (\Sigma y)^2}} \qquad r = \frac{960 - 900}{\sqrt{(960-900)(980-900)}}$$

$r = .87$

INTER-RATER RELIABILITY CALCULATION # 6

NAMES	COUNSELLOR #5		COUNSELLOR #6		
	x	x^2	y	y^2	xy
S_{6i}	3	9	4	16	12
S_{6ii}	3	9	3	9	9
S_{6iii}	3	9	3	9	9
S_{6iv}	2	4	2	4	4
S_{6v}	4	16	4	16	16
S_{6vi}	4	16	4	16	16
S_{6vii}	3	9	3	9	9
S_{6viii}	4	16	4	16	16
S_{6ix}	2	4	3	9	6
S_{6x}	4	16	4	16	16
TOTAL	32	108	34	120	113
	$(\Sigma x)^2$ 1024		$(\Sigma y)^2$ 1156		$\Sigma x \Sigma y$ 1088

$$r = \frac{N\Sigma xy - \Sigma x \Sigma y}{\sqrt{[N\Sigma x^2 - (\Sigma x)^2][N\Sigma y^2 - (\Sigma y)^2]}} \qquad r = \frac{1130 - 1088}{\sqrt{(1080-1024)(1200-1156)}}$$

$r = .85$

IX. Appendix III

Desired Qualities in the Uncle at Large

Attributes of Successful Uncles

1. Ability to accept (entertain) views, values etc. different from his own.

2. Sensitivity to others - listening skills, empathy.

3. Assertiveness - ability to make his needs, views, wishes known to others and stick with them when called for.

4. Flexibility - ability to adjust to the demands, moods, opportunities of the situation - compromise is possible.

5. Freeness - allows himself, in certain times and places to feel, think and behave spontaneously - gay abandon.

6. Stability - Situation will permit regular contact over time.

7. Consistancy - congruent messages, doesn't say one thing and do another - also responds to people in a patterned way - predictable to a degree.

8. Dependability - will be where he says when he says. Will do what he says.

9. Values uniqueness in the person.

Uncle Qualities needed for Success

Self-assurance

1. leadership abilities, confident, warm, caring, considerate
2. assertive - open to compromise
3. aware of self - physical emotional, social intellectual needs and expression of above
4. aware of behaviors and feelings about self and others

Communication skills

1. honest - open, especially in response to questions about himself
2. able to listen - hear what person is saying as well as what he is not saying.
3. comfort with self and others - non-verbal communication (how he sits, eye contact, etc.)
4. Communicates own ideas and feelings openly
5. congruent

Person Oriented

1. values and practices equality
2. awareness of and acceptance of the need for self-esteem (building of)
3. aware of and encourages others to express their own thoughts and feelings

4. open to sharing and learning from and with others

5. reflective - open to re-evaluate and question his values, attitudes judgements, and expectations

6. demonstrative - awareness of when appropriate

7. aware of, and accepting of both the positive a negative parts of himself (*e.g.* behaviors, thoughts, feelings, *etc.*)

8. positive attitudes and philosophy of life - able look at a situation and determine the positive thing from it

9. deals with problems or concerns constructively - awareness of, and ability to share this process

Flexible

1. spontaneous - able to be serious, have fun - aware of appropriate *vs.* inappropriate behaviors and an ability to share this constructively.

2. able to do what others want at times - find a balance between what he wants to do and a boy wants to do.

Tolerant

1. able to allow a person to learn from his own experiences

2. able to be a guide, a model - know when to push, when to back off.

3. model and encourage self-reliance and independence - not demand it

Firm

1. aware of person *vs.* behavior where discipline and limit

setting is concerned

2. communicate expectations, and reasons for, as opposed to demanding

3. sensitive to others and open to re-evaluating limits

Accepting

1. Knowledge and awareness of child development (physical, emotional, social, and intellectual) - able to accept where a boy is at and work from there awareness of and acceptance of different values and ways of living *re.* boy's family situation

Stable

1. *re.* self and present situation - work, social and emotional.

2. happy, content with his present life situation

3. awareness of, and ability to cope with changes

4. does not have more needs than a boy in the program

5. dependable, consistent

Physically fit

1. energetic

2. able to participate with boy to some degree (not just entertain him)

Intellectual

1. able to communicat on this level if necessary or appropriate.

2. able to encourage a boy to use his intellectual abilities

Emotional

1. able to communicate feelings (positive as well as negative)

2. able to encourage a boy to express all his feelings

Qualities of the "Ideal" Uncle at Large

An ideal 'Uncle' would be a man who has a strong sense of his own personhood; who knows and appreciates himself; who has high self-esteem.

He would be reliable and responsible in fulfiling whatever commitments he makes. In so doing, he would be confident of his ability to carry out what he undertakes and so, would not overextend himself.

He would be flexible and tolerant, yet firm in his own values.

He would be empathic, having realistic expectations of a child, based on his own experiences and learnings about children's needs.

He would have the ability to communicate with a child. He would be a good listener and be able to talk to a child a his level. He would be comfortable expressing his own emotions and hearing a child express his.

He would be non-judgemental, believing that the child has his own legitimate reasons for his behaviors and attitudes.

He would not give advice, but would, instead, help a child identify, and evaluate, and choose his own options.

He would have many interests, be curious, have a spirit of adventure, and be open to learning and trying new activities and ideas.

He would enjoy being with a child, appreciating him for

his own uniqueness, and find excitement in being a part of the child's development and take pleasure in the child's pleasure.

X. Appendix IV

MMPI Items entered into Regression Equation to Predict VPR

404. People have often misunderstood my intentions when I was trying to put them right and be helpful. F.

462. I feel unable to tell anyone all about myself. T.

223. I very much like hunting. F.

159. I cannot understant what I read as well as I used to. T.

558. A large number of people are guilty of bad sexual conduct. F.

3. I wake up fresh and rested most mornings. F.

78. I like poetry. F.

319. Most people inwardly dislike putting themselves out to help other people. F.

532. I can stand as much pain as others can. F.

474. I have to urinate no more often than others. T.

39. At times I feel like smashing things. T.

52. I prefer to pass by school friends, or people I have not seen for a long time, unless they speak to me first. T.

455. I am often said to be a hothead. F.

369. At parties I am more likely to sit by myself or with just one other person than to join in with the crowd. T.

40. Most anytime I would rather sit and daydream than do anything else. F.

268. I can easily make other people afraid of me, and sometimes do for the fun of it. F.

109. Some people are so bossy that I feel like doing the opposite of what they request, even though I know they are right. F.

111. I have never done anything dangerous for the thrill of it. F.

174. I have never had a fainting spell. F.

8. My daily life is full of things that keep me interested. T.

133. I have never indulged in any unusual sex practices. F.

419. I played hooky from school quite often as a youngster. F.

261. If I were an artist I would like to draw flowers. F.

343. I usually have to stop and think before I act even in trifling matters. F.

522. I have no fear of spiders. F.

399. I am apt to pass up something I want to do when others feel it isn't worth doing. F.

433. I used to have imaginary companions. T.

345. I often feel as if things were not real. T.

475. I am a special agent of God. T.

15. Once in a while I think of things too bad to talk

about. T.

448. I am bothered by people outside, on streetcars, in stores, etc., watching me. F.

229. I should like to belong to several clubs or lodges. F.

55. I am almost never bothered by pains over the heart or in my chest. F.

430. I am attracted by members of the opposite sex. F.

34. I have a cough most of the time. T.

484. I have one or more faults which seem so big that it seems better to accept them and try to control them rather than to try to get rid of them. F.

XI. Appendix V

POI Items entered into Regression Equation to predict VPR

(Random Pre-selection)

65 a. I hardly ever gossip.
b. I gossip a little at times.

54 a. Impressing others is most important.
b. Expressing myself is most important.

101 a. I can express affection regardless of whether it is returned.
b. I cannot express affection unless I am sure it will be returned.

45 a. I am bound by my duties and obligations to others.
b. I am not bound by my duties and obligations to others.

104 a. Wishing and imagining can be bad.
b. Wishing and imagining are always good.

58 a. I must avoid sorrows at all cost.
b. It is not necessary for me to avoid sorrow.

40 a. I believe I have an innate capacity to cope with life.
b. I do not believe I have an innate capacity to cope with life.

12 a. I feel guilty when I am selfish.
b. I don't feel guilty when I am selfish.

22 a. I accept my weaknesses.
b. I don't accept my weaknesses.

38 a. I live in terms of my wants, likes, dislikes, and values.
b. I do not live in terms of my wants, likes, dislikes, and values.

81 a. Two people will get along best if each concentrates on pleasing the other.
b. Two people will get along best if each person feels free to express himself.

43 a. I believe that man is essentially good and can be trusted.
b. I believe that man is essentially evil and cannot be trusted.

96 a. I am orthodoxly religious.
b. I am not orthoxly religious.

145 a. My hope for the future depends on having friends.
b. My hope for the future does not depend on having friends.

51 a. I believe that knowledge of what is right makes people act right.
   b. I do not believe that knowledge of what is right makes people act right.

19 a. I can give without requiring the other person to appreciate what I give.
   b. I have a right to expect the other person to appreciate what I give.

106 a. I am loved because I give love.
   b. I am loved because I am loveable.

3 a. I feel I must always tell the truth.
   b. I do not always tell the truth.

64 a. Appearances are all-important.
   b. Appearances are not terribly important.

114 a. I have had an experience where life seemed just perfect.
   b. I have never had an experience where life seemed just perfect.

136 a. I regret my past.
   b. I do not regret my past.

36 a. I believe the persuit of self-interest is opposed to interest in others.
   b. I believe the persuit of self interest is not opposed to interest in others.

47 a. There are times when just being silent is the best way I can express my feelings.
   b. I find it difficult to express my feelings by just being silent.

72 a. I accept inconsistencies within myself.
   b. I cannot accept inconsistencies within myself.

59 a. I strive always to predict what will happen in the future.
   b. I do not feel it necessary to predict what will happen in the future.

62 a. There are many times when it is more important to express feelings than to carefully evaluate the situation.
   b. There are very few times when it is more important to express feelings than to carefully evaluate the situation.

76 a. I only feel free to show friendly feelings to

strangers.
b. I feel free to show both friendly and unfriendly feelings to strangers.

XII. Appendix VI

POI Items entered into Regression Equation to Predict VPR

(Correlation Pre-selected Method)

65 a. I hardly ever gossip.
b. I gossip a little at times.

54 a. Impressing others is most important.
b. Expressing myself is most important.

101 a. I can express affection regardless of whether it is returned.
b. I cannot express affection unless I am sure it will be returned.

58 a. I must avoid sorrows at all cost.
b. It is not necessary for me to avoid sorrow.

71 a. I will continue to grow only by setting my sights on a high-level, socially approved goal.
b. I will continue to grow best by being myself.

61 a. I only feel free to express warm feelings to my friends.
b. I feel free to express both warm and hostile feelings to my friends.

1 a. I am bound by the principle of fairness.
b. I am not absolutely bound by the principle of fairness.

38 a. I live in terms of my wants, likes, dislikes, and values.
b. I do not live in terms of my wants, likes, dislikes, and values.

59 a. I strive always to predict what will happen in the future.
b. I do not feel it necessary to predict what will happen in the future.

105 a. I spend more time preparing to live.
b. I spend more time actually living.

30 a. My moral values are determined, for the most part, by the thoughts, feelings and decisions of others.
b. My moral values are not determined, for the most part by the thoughts, feelings, and decisions of others.

85 a. I blame my parents for a lot of my troubles.
b. I do not blame my parents for my troubles.

74 a. I don't mind laughing at a dirty joke.
b. I hardly ever laugh at a dirty joke.

149 a. I can feel comfortable with less than perfect

performance.
b. I feel uncomfortable with less than perfect performance.

17 a. I believe it is important to accept others as they are.
b. I believe it is important to understand why others are as they are.

76 a. I only feel free to show friendly feelings to strangers.
b. I feel free to show both friendly and unfriendly feelings to strangers.

81 a. Two people will get along best if each concentrates on pleasing the other.
b. Two people will get along best if each person feels free to express himself.

117 a. I am afraid to be tender.
b. I am not afraid to be tender.

20 a. My moral values are dictated by society.
b. My moral values are self-determined.

24 a. Sometimes I am cross when I am not feeling well.
b. I am hardly ever cross.

25 a. It is necessary that others approve of what I do.
b. It is not always necessary that others approve of what I do.

57 a. I feel bound to keep promises I make.
b. I do not always feel bound to keep promises I make.

133 a. I like to withdraw temporarily from others.
b. I do not like to withdraw temporarily from others.

139 a. People have an instinct for evil.
b. People do not have an instinct for evil.